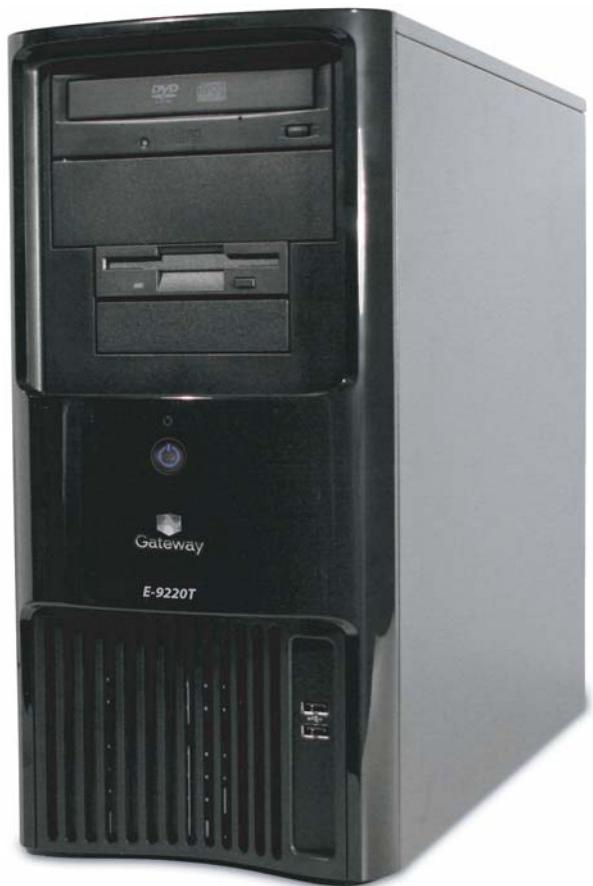


Gateway E-9220T Server

User Guide



Contents

1 Checking Out Your Gateway Server	1
Front	2
Back	3
Interior	4
System board	5
Getting Help	6
Gateway Web site	6
2 Setting Up Your Server	7
Setting up the hardware	8
Protecting from power source problems	9
Starting your server	10
Understanding the power-on self-test	11
Turning off your server	12
Setting up the operating system	13
Initial hardware settings	13
3 Maintaining Your Server	15
Caring for your server	16
Cleaning your server	16
Preparing for system recovery	18
Recording the BIOS configuration	18
System administration	19
Gateway Server Manager	19
Server security	19
Creating a DOS-bootable System Update Package (<i>SUP</i>) CD	21
Using Active Management Technology (<i>AMT</i>)	23
Using your System Companion CD	26
4 Installing Components	27
Preparing to install components	28
Selecting a place to work	28
Gathering the tools you need	28
Preventing static electricity discharge	29
Accessing the internal components	30
Opening the server case	30
Removing the bezel assembly	32
Removing the processor air duct	33
Installing the processor air duct	34
Installing the bezel assembly	36
Closing the server case	37

Installing drives	38
Installing or replacing a fixed or removable-media drive	39
Installing or replacing a hard drive	41
Configuring your onboard RAID solution	42
Configuring the onboard SATA RAID solution	42
Installing memory	45
Memory online sparing	46
Installing PCI expansion cards	47
Replacing the processor	51
Replacing a power supply module	54
Replacing a fan	56
Replacing the CMOS battery	59
Replacing the system board	61
5 Using the BIOS Setup Utility	65
Opening the BIOS Setup utility	66
Updating the BIOS	67
Resetting the BIOS	68
Resetting BIOS passwords	69
6 Troubleshooting	71
Safety guidelines	72
Error messages	73
Troubleshooting	75
First steps	75
Battery replacement	75
Beep codes	76
BIOS	79
CD or DVD drive	79
Diskette drive	79
Expansion cards	80
Hard drive	80
Internet	82
Keyboard	82
Memory	82
Modem (telephone dial-up)	82
Monitor	84
Power	85
Processor	85
Telephone support	86
Before calling Gateway Customer Care	86
Telephone support	87
Tutoring and training	87

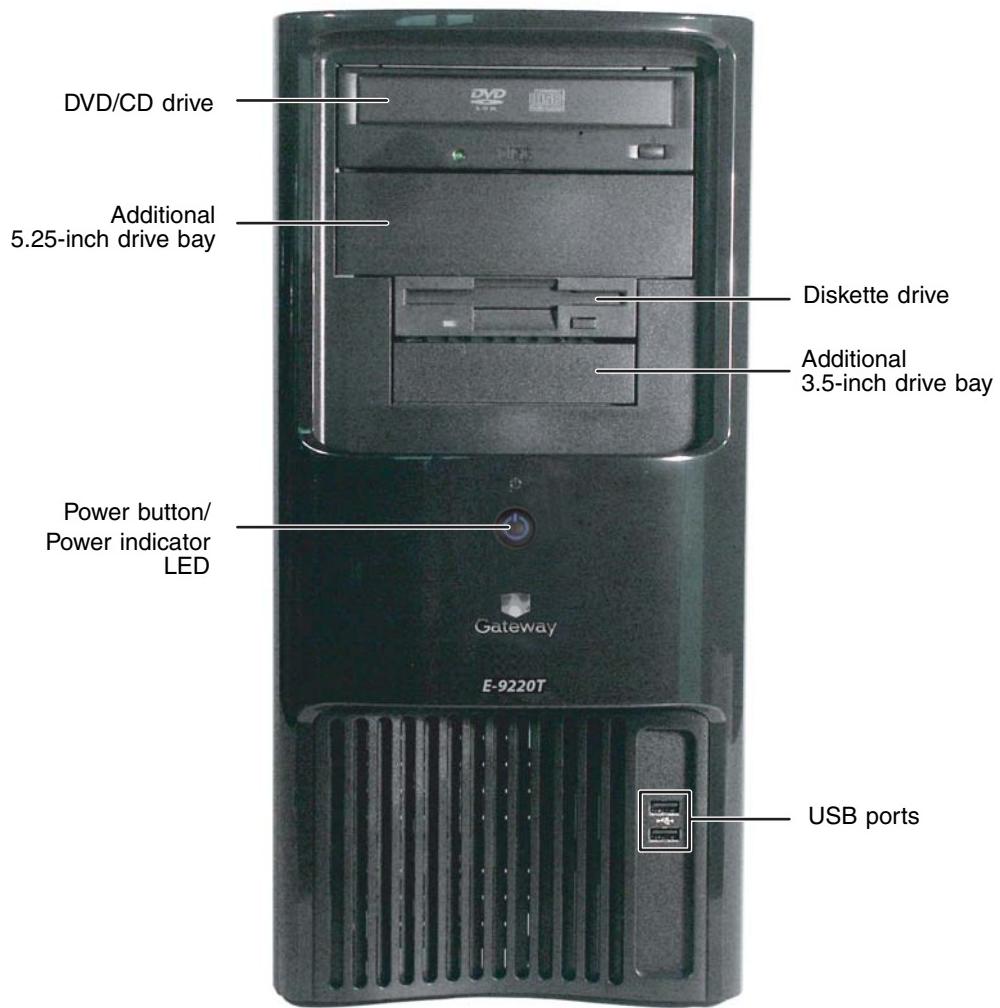
A Server Specifications	89
System specifications	90
System board specifications	91
Environmental specifications	92
Electronic specifications	93
Memory map	93
Interrupts	93
Additional specifications	94
B BIOS Settings	95
C Safety, Regulatory, and Legal Information	103
Index	113

Chapter 1

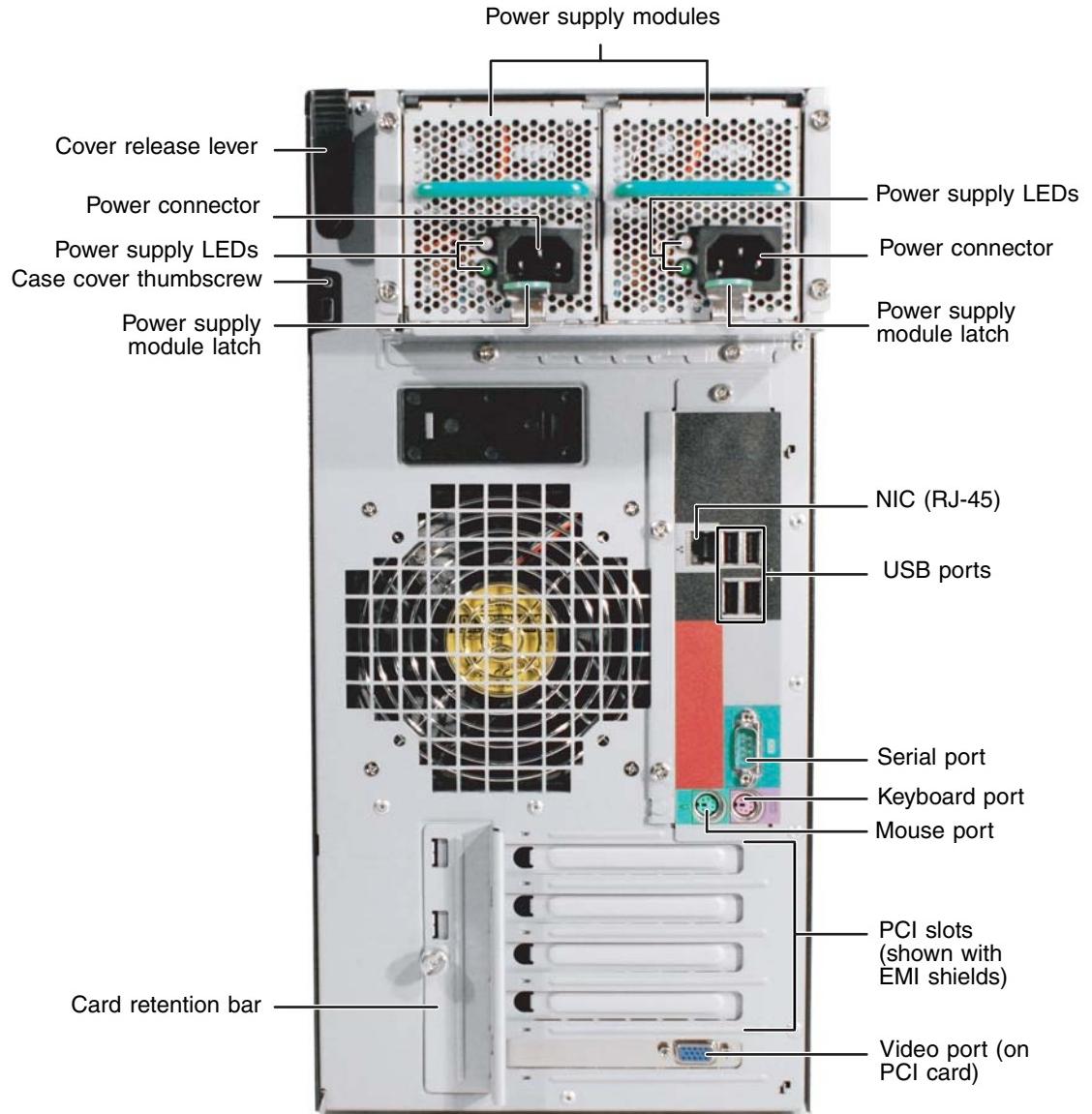
Checking Out Your Gateway Server

- Locating drives, ports, jacks, and controls
- Locating system board components
- Getting help

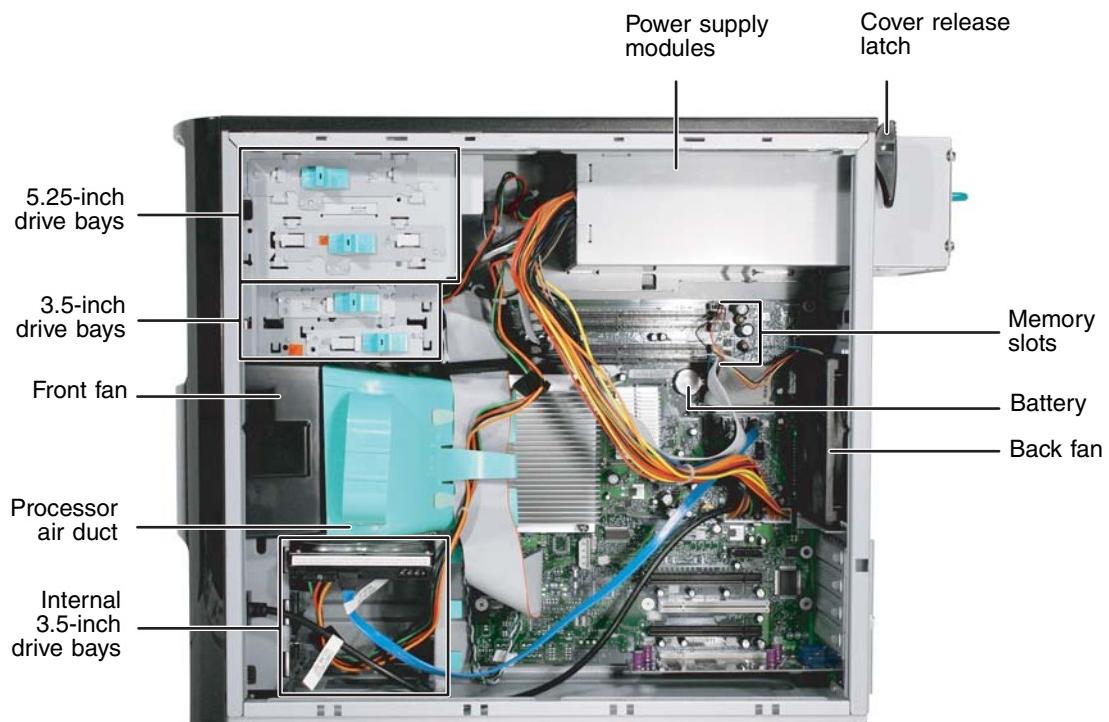
Front



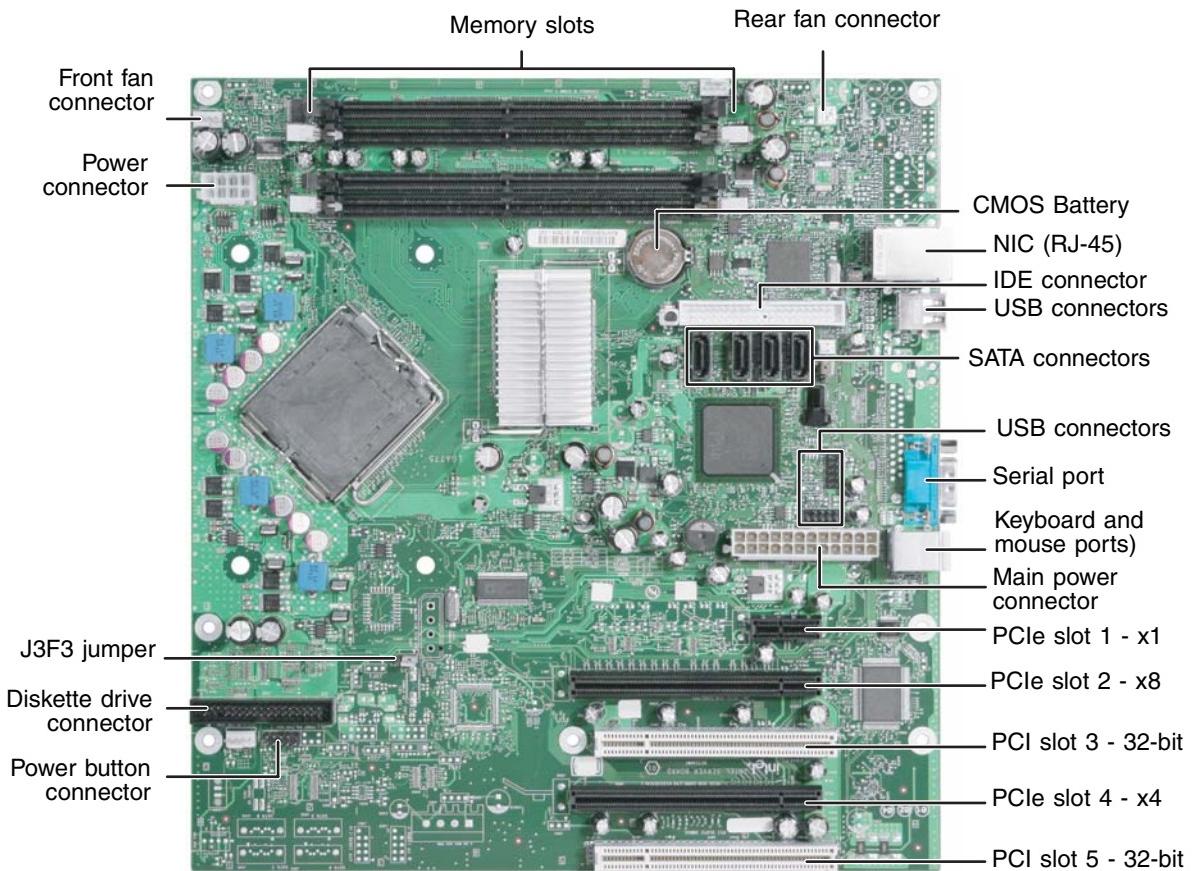
Back



Interior



System board



Getting Help

In addition to your operating system's documentation, you can use the following information resources to help you use your server.

Gateway Web site

Gateway provides a variety of information on its Web site to help you use your server.

Visit the Gateway Web site at support.gateway.com for:

- Technical documentation and product guides
- Technical tips and support
- Updated hardware drivers
- Order status
- Frequently asked questions (FAQs)

Chapter 2

Setting Up Your Server

- Using your server safely
- Starting and turning off your server
- Restarting (rebooting) your server
- Setting up the operating system

Setting up the hardware

To make sure that your working environment is safe:

- Use a clean, dry, flat, stable surface for your server. Allow at least 6 inches at the back of the server for cabling and air circulation.
- Use the instructions on your server's setup poster to set up your hardware.
- Use an uninterruptible power supply (UPS) with surge protection for protection from power outages and power spikes.

Warning



Your server comes with a 3-wire AC power cords fitted with the correct plug style for your region. If these plugs do not match the connector on your UPS or wall outlet, do not attempt to modify the plugs in any way. Use a UPS or wall outlet that is appropriate for the supplied AC power cords.

- Avoid subjecting your server to extreme temperature changes. Do not expose your server to direct sunlight, heating ducts, or other heat-generating objects. Damage caused by extreme temperatures is not covered by your warranty. As a general rule, your server is safest at temperatures that are comfortable for you.
- Keep your server and magnetic media away from equipment that generates magnetic fields, such as unshielded stereo speakers. Strong magnetic fields can erase data on both diskettes and hard drives. Even a telephone placed too close to the server may cause interference.

Protecting from power source problems

Line conditioners, and uninterruptible power supplies can help protect your server against power source problems.

Line conditioners

A line conditioner protects your server from the small fluctuations in voltage from an electrical supply. Most servers can handle this variation, called *line noise*, without problems. However, some electrical sources include more line noise than normal. Line noise can also be a problem if your server is located near, or shares a circuit with, a device that causes electromagnetic interference, such as a television or a motor.

Some uninterruptible power supplies include simple line-conditioning capabilities.

Uninterruptible power supplies

Use an uninterruptible power supply (UPS) to protect your server from data loss during a total power failure. A UPS uses a battery to keep your server running temporarily during a power failure and lets you save your work and shut down your server. You cannot run your server for an extended period of time while using only the UPS. Be sure to use a UPS with surge protection. To buy a UPS, contact Gateway Customer Care, Gateway Sales, or visit accessories.gateway.com. For more information on contacting Customer Care, see “Telephone support” on page 86.

Starting your server

Before you start your server for the first time:

- Make sure that the server and monitor are plugged into a power outlet or UPS and that the UPS (if you are using one) is turned on.
- Make sure that all cables are connected securely to the correct ports and jacks on the back of the server.

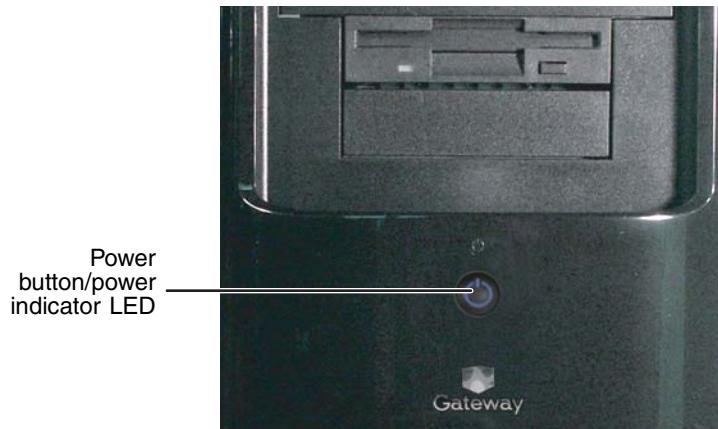
Caution



When you connect peripheral devices to the server, make sure that your server and devices are turned off and the power cords are unplugged.

To start the server:

- 1 Press the power button.



When the power indicator LED is...	It means...
Green	The server is turned on.
Off	The server is turned off.
Slowly blinking	Low power state (S1 — S3)

If nothing happens when you press the power button:

- Make sure that the UPS, if you are using one, is connected securely to an electrical outlet, turned on, and working correctly.
 - Make sure that the monitor is connected to the server, plugged into the power outlet or UPS, and turned on. You may also need to adjust the monitor's brightness and contrast controls.
- 2** The first time you turn on the server, any pre-installed operating system may begin asking you for configuration settings. See your operating system's documentation for instructions on configuring advanced settings for your specific network.



Selecting the boot device



To select which device your server boots from:

- 1** During server startup, press **F10**. The *Boot* menu opens.
- 2** Select the device you want to boot from. Common choices include:
 - Removable Dev. (Removable device)
 - ATAPI CDROM (CD or DVD drive)
 - Hard Drive
 - IBA GE NIC (Network boot)



Understanding the power-on self-test

When you turn on your server, the power-on self-test (POST) routine checks the server memory and components. If POST finds any problems, the server displays error messages. Write down any error messages that you see, then see “[Error messages](#)” on page 73 and “[Beep codes](#)” on page 76 for troubleshooting information.

Turning off your server

Every time you turn off your server, first shut down the operating system. You may lose data if you do not follow the correct procedure.



To turn off the server:

- 1 See the operating system's documentation or online help for instructions on shutting down the operating system. Whenever possible, you should use the operating system's shut down procedure instead of pressing the power button.
- 2 If your server did not turn off automatically, press the power button. If nothing happens when you press the power button, press and hold it for five seconds and the server will turn off.

Warning



The power button on the server does not turn off server AC power. To remove AC power from the server, you must unplug **both** AC power cords from the wall outlet or power source. The power cords are considered the disconnect device to the main (AC) power.

Caution



If you routinely turn off your server (daily or weekly), do not unplug the server or use the On/Off switch on the UPS. Regularly cutting off all power to your server may cause the CMOS battery to fail prematurely.



Setting up the operating system

If you ordered your server with the operating system already installed by Gateway, in most cases it is completely installed and the basic settings are already configured. The Windows Small Business Server operating system may require additional installation, depending on the version you ordered. See your operating system's documentation for instructions on completing the installation or configuring advanced settings for your specific network.

If you are installing an operating system because it was not already installed by Gateway, see the appropriate installation guide for instructions.

Initial hardware settings

Your server comes from the manufacturer with the correct initial hardware settings to operate your server as configured. However, at some point you might want to change settings to reflect a tasking change, a change in security requirements, or the addition of new resources to your server.

General hardware settings, as well as the onboard RAID solution, can be changed by using the BIOS Setup utility. Add-in RAID solutions must be configured using the specific RAID console which accompanied that solution.

For information on the BIOS Setup utility, see “[Using the BIOS Setup Utility](#)” on page 65. For information on BIOS settings, see “[BIOS Settings](#)” on page 95. For information on the RAID BIOS Console utility, see “[Configuring your onboard RAID solution](#)” on page 42. For information on a specific RAID console for an add-in RAID solution, see the documentation on that hardware which accompanied your RAID solution.

Chapter 3

Maintaining Your Server

- Caring for your server
- Preparing for system recovery
- System administration
- Using Active Management Technology

Caring for your server

To extend the life of your server:

- Be careful not to bump or drop your server.
- When transporting your server, we recommend that you put it in the original packaging materials.
- Keep your server and magnetic media away from equipment that generates magnetic fields.
- Avoid subjecting your server to extreme temperatures. Do not expose your server to heating ducts or other heat-generating objects. Damage caused by extreme temperatures is not covered by your warranty. As a general rule, your server is safest at temperatures that are comfortable for you.
- Keep all liquids away from your server. When spilled onto server components, almost any liquid can result in expensive repairs that are not covered under your warranty.
- Avoid dusty or dirty work environments. Dust and dirt can clog the internal mechanisms and can cause the server to overheat.

Cleaning your server

Keeping your server clean and the vents free from dust helps keep your server performing at its best. Your server cleaning kit could include:

- A soft, lint-free cloth
- Glass cleaner
- An aerosol can of air with a narrow, straw-like extension
- Isopropyl alcohol
- Cotton swabs
- A tape drive cleaning cartridge (if a tape drive is installed)
- A CD or DVD drive cleaning kit

Cleaning tips

- Always turn off your server and other peripheral devices before cleaning any components.

Warning



When you shut down your server, the power turns off, but some electrical current still flows through your server. To avoid possible injury from electrical shock, unplug the power cords and all other cables connected to the server.

- Use a damp, lint-free cloth to clean your server and other parts of your server system. Do not use abrasive or solvent cleaners because they can damage the finish on components.
- Keep the cooling vents free of dust. With your server turned off and unplugged, brush the dust away from the vents with a damp cloth, but be careful not to drip any water into the vents.

Cleaning the keyboard

You should clean the keyboard occasionally by using an aerosol can of air with a narrow, straw-like extension to remove dust and lint trapped under the keys.

If you spill liquid on the keyboard, turn off your server and turn the keyboard upside down to let the liquid drain. Let the keyboard dry completely before trying to use it again. If the keyboard does not work after it dries, you may need to replace it. Keyboard damage resulting from spilled liquids is not covered by your warranty.

Cleaning the screen

If your computer screen is a flat panel display, use only a damp, soft cloth to clean it. Never spray water directly onto the screen.

Caution



The flat panel display screens are made of specially coated glass and can be scratched or damaged by abrasive or ammonia-based glass cleaners.

- OR -

If your computer screen is not a flat panel display, use a soft cloth dampened with glass cleaner to clean the screen. Never spray cleaner directly onto the screen.

Cleaning the tape drive

If you use a tape drive to back up your files, regular maintenance will lengthen the life of the drive. To maintain the drive's reliability:

- Clean the drive monthly with the cleaning cartridge included with the drive.
- Remove the tape from the drive whenever the drive is not in use.

Preparing for system recovery

If your system files are corrupted, you may not be able to start the server from the hard drive. *Startup diskettes* are diskettes that let you start the server and attempt to fix the problem. See your operating system's documentation or online help for instructions on creating startup diskettes.

Some operating systems also let you create an emergency repair diskette to back up critical operating system files. See your operating system's documentation or online help for instructions on using an emergency repair diskette.

Recording the BIOS configuration

To help keep track of your custom changes to BIOS settings and to prepare for system recovery, you should record your BIOS configuration after you have your server set up and working.



To record your BIOS configuration:

- 1 Print the appendix for [BIOS Settings](#) in this guide.
- 2 Restart your server, then press F2 when the Gateway logo screen appears during startup. The BIOS Setup utility opens.
- 3 Record the BIOS settings on your printout.



System administration

Gateway Server Manager

Gateway Server Manager lets you manage multiple computers on a Windows network from a single window, then implement commands and policies across the network with a single action. With Gateway Server Manager, you can run system management tasks which are triggered by certain events or conditions.

Printed documentation comes with the *Gateway Server Manager* CD. You can find additional documentation in the program's online help.

Server security

To prevent unauthorized use of the server, you can set BIOS startup passwords.

Using BIOS security passwords

Set up a supervisor password to prevent unauthorized access to the BIOS Setup utility. After you create a supervisor password, you can set up a user password to prevent unauthorized access to the server. You can:

- Enter either password to finish starting the server.
- Enter the supervisor password to access the BIOS Setup utility.

For information about resetting BIOS passwords, see “[Resetting BIOS passwords](#)” on page 69.



To set the BIOS security passwords:

- 1 Restart your server, then press F2 when the Gateway logo screen appears during startup. The BIOS Setup utility opens.
- 2 Select the **Security** menu.

- 3 Select the password to set according to the following table.

Option	Description
Supervisor password	To control access to system configuration, set a supervisor password. Using a supervisor password lets you make changes to any setting in the BIOS. Passwords can be cleared. To clear the passwords, see “ Resetting BIOS passwords ” on page 69.
User password	The supervisor password must be set up before a user password can be set. To control access to the server, set a user password. The supervisor can set the level of access granted to the user password. The user password access levels are: <ul style="list-style-type: none">▪ No Access. User cannot access the BIOS Setup utility.▪ Limited. User can change only the date and time.▪ View Only. User can see all settings, but cannot change them.▪ Full. User can change every setting except the supervisor password. Passwords can be cleared. To clear the passwords, see “ Resetting BIOS passwords ” on page 69.

- 4 Type the password and press **ENTER**, then type it again and press **ENTER**.

- 5 Save your changes and exit the BIOS Setup utility.



Creating a DOS-bootable System Update Package (SUP) CD

Several utilities available on this server require that you boot the server to DOS. A DOS-bootable System Update Package (SUP) CD, containing the update files, provides a convenient way to accomplish this.

For this process, you will need:

- A CD burner drive
- CD burning software
- A blank CD

To create a DOS-bootable SUP CD:

- 1 Put a blank CD into your CD burner.
- 2 Log on to your Internet connection.
- 3 Go to support.gateway.com.
- 4 Click **Downloads**, then **Browse all downloads**.
- 5 Select **Servers** for Step 1.
- 6 Select **E-9220T** for Step 2.
- 7 Select your operating system for Step 3.
- 8 Select **BIOS downloads** for Step 4.
- 9 Click **Display results** for Step 5.
- 10 Select the System Update Package file from the list of available files.
- 11 Click **Download now**, then select a convenient and easily found location for the file.
- 12 After the file downloads, find the .ISO file on your hard drive and double-click. Your CD burner software will open.

Important



CD burning software must be installed on your system for this process to work.

- 13 Click to start writing to the CD. The CD created will be DOS-bootable and will contain the latest updates for BIOS, CMOS, and so on.





Booting from the SUP CD:

- 1 Restart your server, then press F2 when the Gateway logo screen appears during startup. The BIOS Setup utility opens.
- 2 Select the **Boot** menu, then press ENTER. The *Boot* menu opens.
- 3 Select the CD drive on the *Boot* menu, then press ENTER. The server will now boot to the CD drive. If the CD drive is not detected, see “CD or DVD drive” on page 79.
- 4 Insert the bootable CD into the CD drive.
- 5 Exit the BIOS Setup utility and let the server continue to boot.
- 6 After the updates are completed, restart your server, then press F2 when the Gateway logo screen appears during startup. The BIOS Setup utility opens.
- 7 Use the down arrow key to select the **Boot** menu, then press ENTER. The *Boot* menu opens.
- 8 Select your normal boot drive from the list, then press ENTER. The server will now boot normally.



Using Active Management Technology (AMT)

Active Management Technology (AMT) provides the following:

- OOB System Management—Allows remote management of platforms, regardless of power on/off or OS state.
- Remote Troubleshooting and Recovery—Significantly reduces desk-side visits, increasing the efficiency of IT technical staff.
- Proactive Alerting—Decreases downtime and minimizes time-to-repair.
- Remote Hardware and Software Tracking—Eliminates manual inventory tracking and human error, reducing asset accounting costs and increasing tracking accuracy.
- Non-Volatile Storage—Survives power outages and system rebuilds.
- Tamper-Resistant Agents—Prevent users from removing critical inventory, remote-control, or virus-protection agents.

► To enable Active Management Technology (AMT):



The AMT network interface is disabled by default. If you do not perform the following steps, AMT will not be available on your local network.

- 1 Start your server, then press F2 to enter the BIOS Setup utility.
- 2 Click **Advanced** to go to the Advanced menu, then click **Management Configuration**.
- 3 Enable Enter AMT BX Setup, then save and exit the BIOS Setup utility. The next time your server is rebooted, the AMT console will open.



► To configure and access Active Management Technology (AMT):

- 1 Log in to the AMT console by entering the default password “**admin**”.
- 2 Select Option 3 – **TCP/IP**.
- 3 When you are asked if you want to “Disable Network Interface – Y/N,” select **No**.

- 4** When you are asked if you want the “DHCP Enabled – Y/N,” enter the response that is appropriate to your situation.

If you enter **No**, then enter:

- A Static IP Address for the AMT interface (Example: 10.225.200.101)
- The Subnet Mask (Example: 255.255.255.0)
- The Default Gateway (Example: 10.225.200.1)
- The Preferred DNS Server (Example: 10.225.200.254)
- The Alternate DNS Server (Example: 10.225.200.253)
- The Domain Name (Example: irveng.local)

- 5** Press **ESC** to exit, then select **Yes** to confirm.

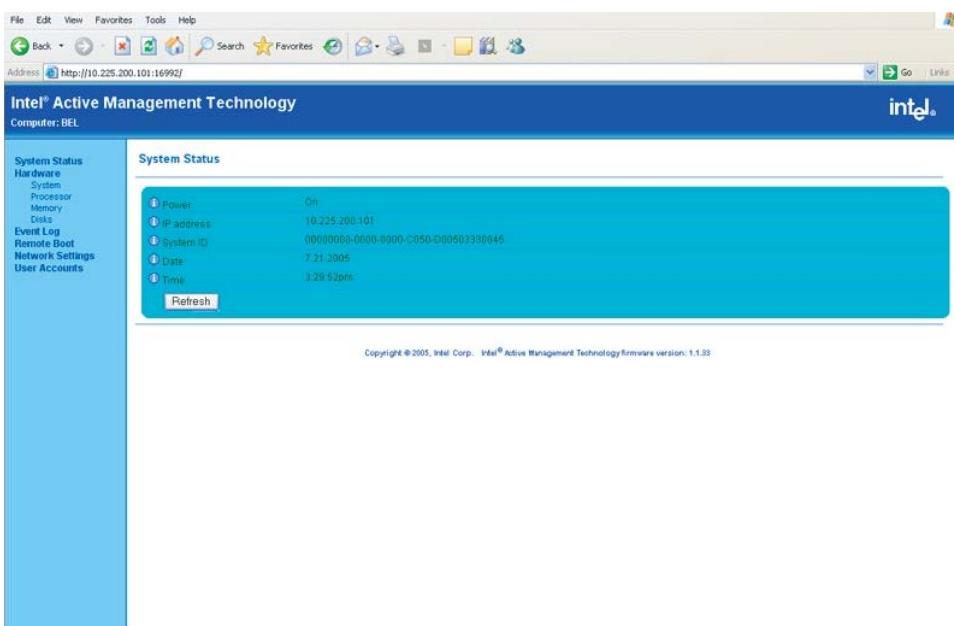
- 6** From another computer on your local network, open your Web browser.

- 7** Type the IP Address of AMT Interface (the IP address you entered in **Step 4**, plus port 16992. (For example: <http://10.225.200.101:16992>). A login prompt will appear.

- 8** Enter the following at the login prompt:

- Default Username – **admin**
- Default Password – **admin**

You are now logged in to the AMT Interface on your server and the following screen opens.



From this initial screen you have access to the following information for the computer you are currently using:

- System Information
- Processor Information
- Memory Information
- Disk Information
- Event Log
- Remote
- Network Configuration

You can also change Network Settings and manage User Accounts.

- 9** To exit the AMT Interface, press Esc, then press Y to confirm.



Using your System Companion CD

You can use your *System Companion CD* to:

- Install hardware drivers
- Install programs
- View server documentation

Instructions for using the CD are provided in *Using Your System Companion CD*, a booklet which is included with the CD.

Chapter 4

Installing Components

- Opening and closing the server case
- Installing and replacing major components

You must open your server case to install components. If you are not comfortable with these procedures, get help from a more experienced computer user or computer service technician, or contact Gateway Customer Care.

Preparing to install components

Selecting a place to work

Work on your server in an area that:

- Is clean (avoid dusty areas)
- Is a low-static environment (avoid carpeted areas)
- Has a stable surface on which to set your server
- Has enough room to place all of your server parts
- Is near a grounded outlet so you can test your server after installation
- Is near a telephone (in case you need help from Gateway Customer Care). The telephone must be directly connected to a telephone jack and cannot be connected to your server.

Gathering the tools you need

Some tools and supplies that you may need to work on your server are:

- A notebook to take notes
- A Phillips screwdriver
- A small flat-blade screwdriver
- Small containers to store various types of screws
- A grounding wrist strap (available at most electronic stores)

Preventing static electricity discharge

The components inside your server are extremely sensitive to static electricity, also known as *electrostatic discharge* (ESD).

Warning



To avoid exposure to dangerous electrical voltages and moving parts, turn off your server and unplug the power cords and modem cable before opening the server case.

Caution



ESD can permanently damage electrostatic discharge-sensitive components in the server. Prevent ESD damage by following ESD guidelines every time you open the server case.

Before working with server components, follow these guidelines:

- Turn off the server, then unplug the power cords and all other cables.
- Press the power button to drain any residual power from the server.
- Wear a grounding wrist strap (available at most electronics stores) and attach it to a bare metal part of the server. You can also touch a bare metal surface on the back of the server with your finger.

Warning



To prevent risk of electric shock, do not insert any object into the vent holes of the power supply module.

- Avoid static-causing surfaces such as carpeted floors, plastic, and packing foam.
- Avoid working on the server when your work area is extremely humid.
- Remove components from their antistatic bags only when you are ready to use them. Do not lay components on the outside of antistatic bags because only the inside of the bags provide electrostatic protection.
- Always hold expansion cards by their edges or their metal mounting brackets. Avoid touching the edge connectors and components on the cards. Never slide expansion cards or components over any surface.

Accessing the internal components

Opening the server case

Because the components inside your server are extremely sensitive to static electricity, make sure that you follow the instructions at the beginning of this chapter to avoid static electricity damage.

Caution



For correct cooling and air flow, always reinstall the side panel and the air duct (if included) before you turn on the server. Operating the server without the cover in place can damage server components.



To open the server case:

- 1 Follow the instructions in “[Preventing static electricity discharge](#)” on page 29.
- 2 Turn off the server, then unplug the power cords and all other cables connected to the server.

Warning



This server may have two power cords. To disconnect internal AC power, you must unplug both power cords.

- 3 Remove the case cover thumbscrew.
- 4 Lift the cover release lever.



- 5** Swing the side panel away from the computer.



- 6** Lift the panel away from the server and place it out of the way.



Removing the bezel assembly

To remove the bezel assembly:

- 1 Follow the instructions in “Opening the server case” on page 30.
- 2 After removing the side panel, press the three black plastic tabs (positions indicated by the arrows) to release the right side of the bezel.



- 3 Swing the right side of the bezel out until the left side of the bezel can be disengaged from the left side of the computer, then remove the bezel.



Removing the processor air duct

► To remove the processor air duct:

- 1 Follow the instructions in “Preventing static electricity discharge” on page 29.
- 2 Follow the instructions in “Opening the server case” on page 30.
- 3 Remove the cables from the air duct cable clip.



- 4 Grasp the air duct handle and remove the processor air duct from the chassis.

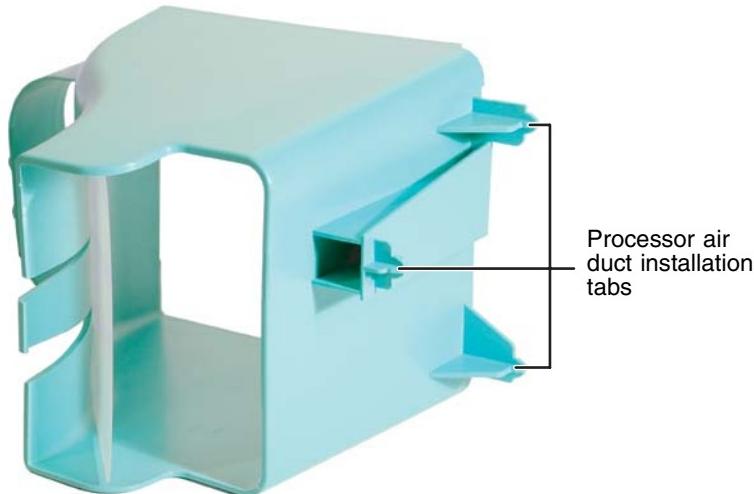


Installing the processor air duct

To install the processor air duct:

- 1 Align the left side of the processor air duct with the front fan and engage the installation tabs on the bottom of the air duct with the installation holes in the side of the chassis.

Important  Be careful not to snag or unplug the fan cable when you install the processor air duct.



- 2** Press the processor air duct into place.
- 3** Place the diskette cable and hard drive power cable behind the cable clip on the processor air duct.



Installing the bezel assembly

To install the bezel assembly:

Important



If you have installed any new drives in the external drive bays, make sure to remove the corresponding filler panels in the bezel before installing it.

- 1 Engage the tabs on the left side of the bezel with the slots in the left side of the computer.



- 2 Swing the right side of the bezel in to engage the tabs on the right side of the bezel with the slots on the right side of the computer.
- 3 Press the right side of the bezel firmly until it snaps into place.



Closing the server case

To close the server case:

- 1** Make sure that all of the internal cables are arranged inside the case so they will not be pinched when you close the case.
- 2** Align the panel tabs into the bottom case notches, then swing the side panel toward the top of the computer to secure it into place.



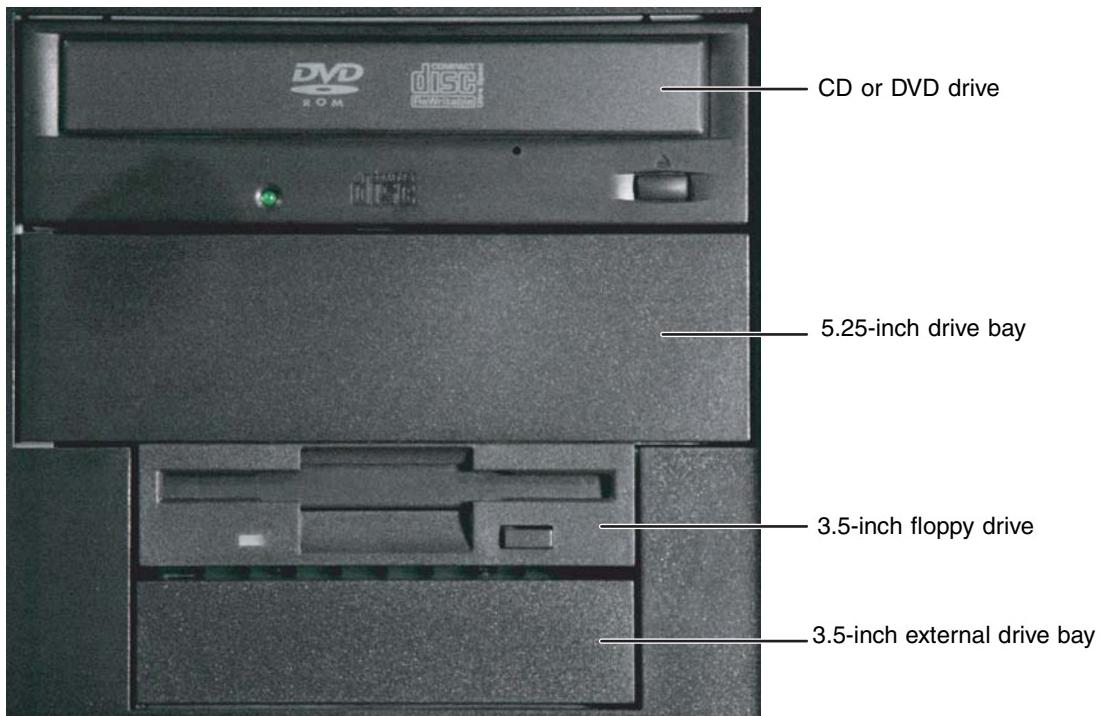
- 3** Replace the case cover thumbscrew.
- 4** Reconnect the power cords and all other cables.



Installing drives

Your server's basic configuration includes one CD or DVD drive and one 3.5-inch diskette drive. Your server also has an additional 5.25-inch drive bay and an additional 3.5-inch drive bay.

Your server can have as many as four SATA (standard) or SCSI (optional) drives in three internal drive bays and one external fixed drive bay (the bottom 3.5-inch bay).



As you prepare to install drives, remember:

- Do not use the top 5.25-inch drive bay for drives which have electronic components exposed on the top. Drive mounting rails at the top of the bay may damage any exposed electronic components.
- Before you install a drive, see the drive's documentation for information on configuring the drive, setting drive jumpers, and attaching cables.

- IDE drives can be configured as master, slave, or cable-select.
 - If cable-select is available (drive assignments will be marked on the cable), the IDE cable assigns the master/slave positions to the drives it connects. You can override these assignments using the jumpers on the drives.
 - If cable-select is not available and only one drive is attached to an IDE controller cable, configure the drive as master if it is a CD or DVD drive. If two drives of any type are attached to the cable, configure one as master and one as slave.
- You may need to configure the drives you install using the BIOS Setup utility. Press F2 at startup to open the BIOS Setup utility.

Installing or replacing a fixed or removable-media drive

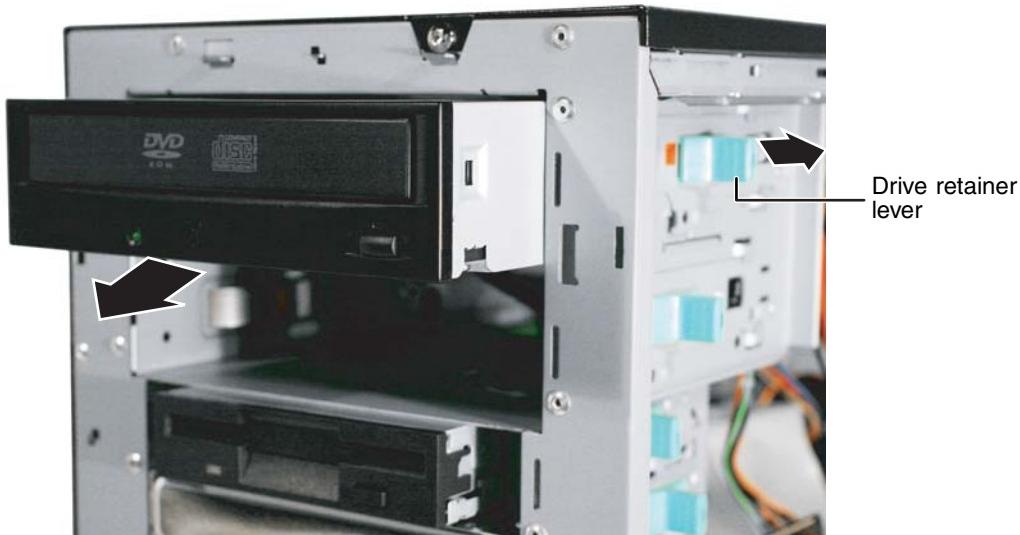
Use these instructions to install or replace a diskette, CD, DVD, hard drive, or tape drive.

To install a drive in an external drive bay:

- 1 Follow the instructions in “[Preventing static electricity discharge](#)” on page 29.
- 2 Follow the instructions in “[Opening the server case](#)” on page 30.
- 3 If you are replacing a CD, DVD, or diskette drive, go to [Step 6](#), otherwise follow the instructions in “[Removing the bezel assembly](#)” on page 32.
- 4 If you are adding a new drive to an available drive bay, remove the EMI shield from the bay by pulling the assembly out of the bay.



- 5 Slide the green drive retainer lever toward the back of the drive bay, then go to [Step 8](#).
- 6 Disconnect the old drive's cables from the back of the drive.
- 7 Slide the green drive retainer lever toward the back of the drive bay, then pull the drive out of the bay.



- 8 Set any jumpers on the new drive. See the drive's documentation for further instructions.
- 9 Slide the new drive into the drive bay allowing it to protrude enough to line up with the bezel when it is replaced, then push the green drive retainer lever toward the front of the drive bay to lock the drive into place.



If you are installing a hard drive in the bottom, external 3.5-inch drive bay, the green drive retainer lever will not slide forward to lock the drive into place. Instead, you must use a screw to secure the drive in the bay.



When installing a CD, DVD, tape drive, or diskette drive, if the green drive retainer lever will not slide forward all the way to lock the drive into place, move the drive slightly, until the lever can be moved forward enough to lock the drive into place.

- 10 Connect the power and data cables.
- 11 Follow the instructions on “[Installing the bezel assembly](#)” on page 36.
- 12 Follow the instructions in “[Closing the server case](#)” on page 37.



Installing or replacing a hard drive

Use these instructions to install or replace a hard drive.



To install a hard drive in the bottom external 3.5-inch drive bay, follow the instructions in “To install a drive in an external drive bay:” on page 39.

► To install a hard drive in an internal drive bay:

- 1 Follow the instructions in “Preventing static electricity discharge” on page 29.
- 2 Follow the instructions in “Opening the server case” on page 30.
- 3 If you are replacing a drive, go to Step 4.

- OR -

If you are adding a new drive to an available drive bay, slide the green drive retainer lever toward the front of the drive bay, then go to Step 7.

- 4 Disconnect the old drive’s cables from the front of the drive.
- 5 Slide the green drive retainer lever toward the front of the drive bay, then pull the drive out of the bay.



- 6 Set any jumpers on the new drive. See the drive’s documentation for further instructions.

- 7** Slide the new drive into the drive bay as far as it will go, then slide the green drive retainer lever toward the back of the drive bay to lock the drive into the bay.

Tips & Tricks

If the green drive retainer lever will not slide back all the way to lock the drive into place, move the drive slightly, until the lever can be moved back enough to lock the drive into place.

- 8** Connect the power and data cables.
9 Follow the instructions in “[Closing the server case](#)” on page 37.
10 Format and partition the drive as necessary.



Configuring your onboard RAID solution

Your server comes equipped with an onboard chipset for a SATA RAID solution, which supports RAID levels 0 (striping), 1 (mirroring), 5 (distributed data and parity), and 10 (RAID 0 + 1). You enable the onboard RAID solution in the BIOS (See [SATA - page 98](#)) and configured by launching the appropriate RAID BIOS console during the boot process.

Configuring the onboard SATA RAID solution

Level	Description and use	Pros	Cons	Number of drives	Fault Tolerant
0	Data divided into blocks and distributed sequentially (pure striping). Use for non-critical data that requires high performance.	High data throughput for large files.	No fault tolerance. Data is lost if a drive fails.	One or two (on this server)	No
1	Data duplicated on another disk (mirroring). Use for read-intensive, fault-tolerant systems.	100 percent data redundancy, providing fault tolerance.	More disk space required. Reduces usable disk space to the size of the smallest drive. Reduced performance during rebuilds.	Two	Yes

Level	Description and use	Pros	Cons	Number of drives	Fault Tolerant
5	Stripes data at a block level across several drives and distributes parity among the drives. No single disk is devoted to parity.	Fast and redundant	More disk space required. Reduces usable disk space to 75% of total storage in the disk array.	Three	Yes
10	A combination of RAID 1 and RAID 0. Raid 0 is used for performance, and RAID 1 is used for fault tolerance.	Fast and redundant	An additional drive required.	Four	Yes

To launch the SATA RAID BIOS console:

- 1 Restart your server.
- 2 Press F2 when the Gateway logo screen appears during startup. The BIOS Setup utility opens.
- 3 From the **Main** BIOS menu, select the **Advanced** menu.
- 4 Select the **Drive Configuration** sub-menu.
- 5 For the **Configure SATA as** option, click **RAID**.
- 6 Exit the BIOS Setup utility.
- 7 Restart your server.
- 8 During the boot process you will see the following message:

Press <Ctrl>-<I> for BIOS Console

Press and hold the CTRL key, then press the I key. The RAID BIOS console will open.

Important



When you press CTRL + I to configure the SATA RAID controller, the error message: **Error (0146): Insufficient Memory to Shadow PCI ROM** may appear. This error message is produced because the BIOS does not have sufficient memory to load the SATA RAID option ROM into memory because other option ROMs are already loaded. This is not a functional problem and can be disregarded. If you receive this message, press F1 to continue.

- 9 Configure the RAID options, then exit the RAID BIOS console.
- 10 Reboot the server.



 **To configure the SATA RAID solution:**

- 1** Open the BIOS Setup utility as described in the previous procedure.
- 2** Select **Create RAID Volume** from the Management menu.
- 3** Enter the name of the volume, or press **ENTER** to accept the default.
- 4** Use the up and down arrow keys to select a RAID level.
- 5** Set the RAID stripe size (unless your RAID level uses mirroring).
- 6** Set the capacity of the volume, then press **ENTER** to create the volume.
- 7** When you have defined the current volume, confirm your settings when prompted.
- 8** Repeat **Step 2** through **Step 7** to configure additional volumes.
- 9** Exit the RAID Configuration utility and reboot the server.



Installing memory

When you upgrade your server memory, make sure that you install the correct type of memory in your server. Your server supports from 256 MB to 8 GB total memory. Supported DIMM sizes include 256 MB, 512 MB, 1 GB, and 2 GB.

Caution



Memory modules must be identical in each bank. Use only DDR2-533 MHz, ECC unbuffered, 240-pin DIMM memory modules in 256 MB, 512 MB, 1 GB, or 2 GB sizes.

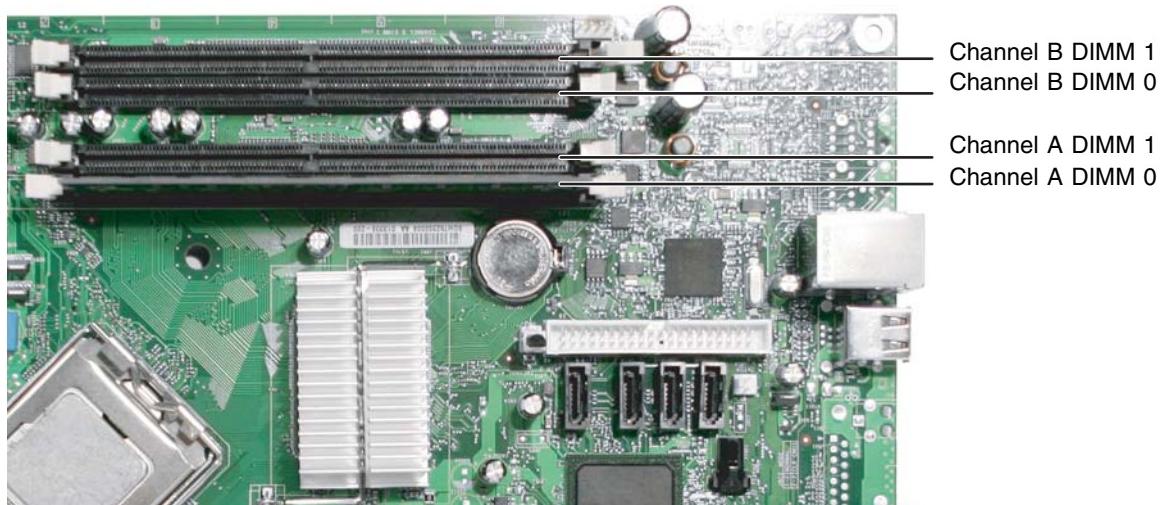
Memory modules must be installed in pairs, to completely fill each bank, and the banks must be filled in order. If you have memory installed incorrectly, your server will not start up.

The BIOS configures the memory controller to run in either single channel or dual channel mode, depending on the following:

- If one or more fully populated DIMM banks are detected, the memory controller will run in dual channel mode.
- If only a single DIMM is present, the memory controller will run in single channel mode.

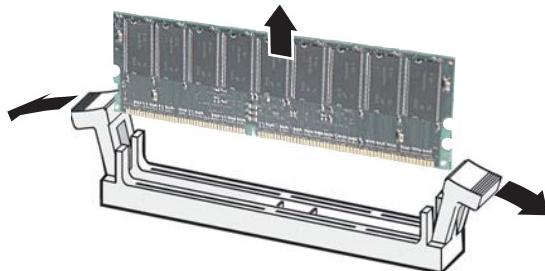
DIMM banks must be populated using the following guidelines:

- DIMM banks must be populated in order, starting with Bank 0.
- Dual rank DIMMs must be populated before single rank DIMMs.
- When using Dual Rank (double row) DIMMs, a maximum of four loads per memory channel is supported, and therefore a maximum of four dual rank DIMMs can be populated on this system board.



To install or replace memory:

- 1 Follow the instructions in “[Preventing static electricity discharge](#)” on page 29.
- 2 Follow the instructions in “[Opening the server case](#)” on page 30.
- 3 Pull the plastic tabs away from the sides of the memory module slot. If you are replacing a memory module, remove the old module.



- 4 Align the notch on the new module with the notch in the memory module slot and press the module firmly into the slot. The tabs on the sides of the memory slot should secure the memory module automatically.
- 5 Follow the instructions in “[Closing the server case](#)” on page 37.
- 6 Restart your server and open the BIOS Setup utility. Verify the **System Memory** listed in the Main menu. When you exit the BIOS Setup utility, make sure that the operating system loads completely.



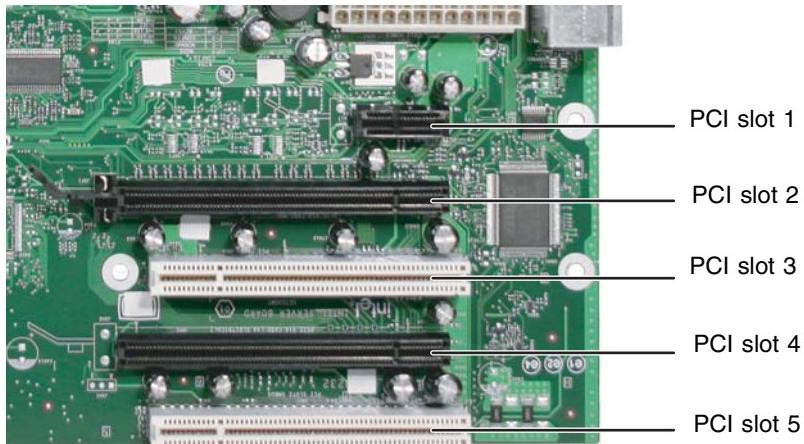
Installing PCI expansion cards

Use the following chart to determine the PCI slot into which you should install your expansion card.

Caution

This server does not have PCI hot-plug capability. Do not attempt to install or remove a PCI card without turning off your server and disconnecting it from the AC power source.

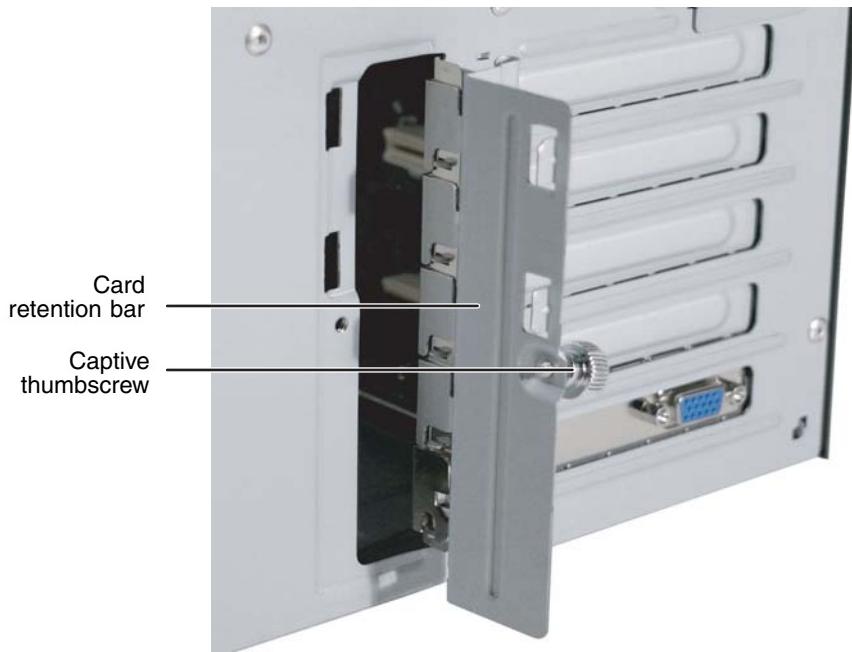
PCI slot	Description
1	PCI Express - x1
2	PCI Express - x8
3	PCI - Runs at 32-bits
4	PCI Express - x4
5	PCI - Runs at 32-bits



To replace, add, or reseat a PCI expansion card:

- 1 Follow the instructions in “[Preventing static electricity discharge](#)” on page 29.
- 2 Follow the instructions in “[Opening the server case](#)” on page 30.
- 3 If you are replacing a card, disconnect any cables that are attached to the old card.

- 4 Loosen the captive thumbscrew on the card retention bar and swing the bar out from the back of the chassis.



- 5 If you are replacing a card, remove the old expansion card. To loosen the card you can slightly rock the card end-to-end, but do not bend the card sideways.

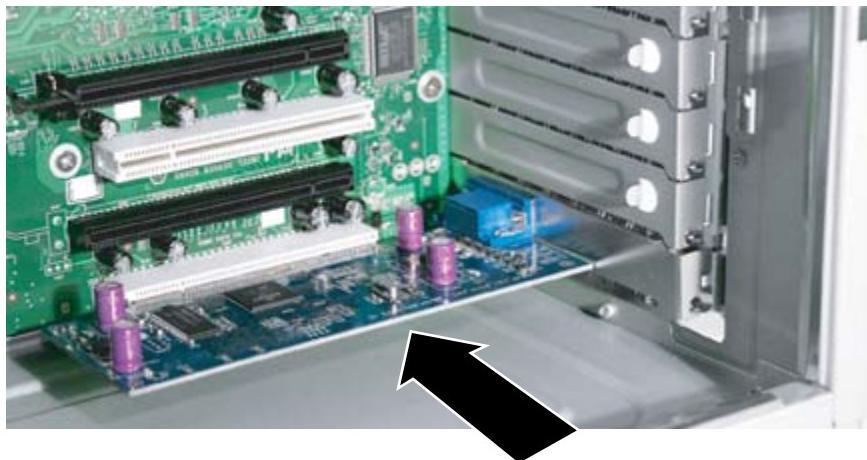


Caution

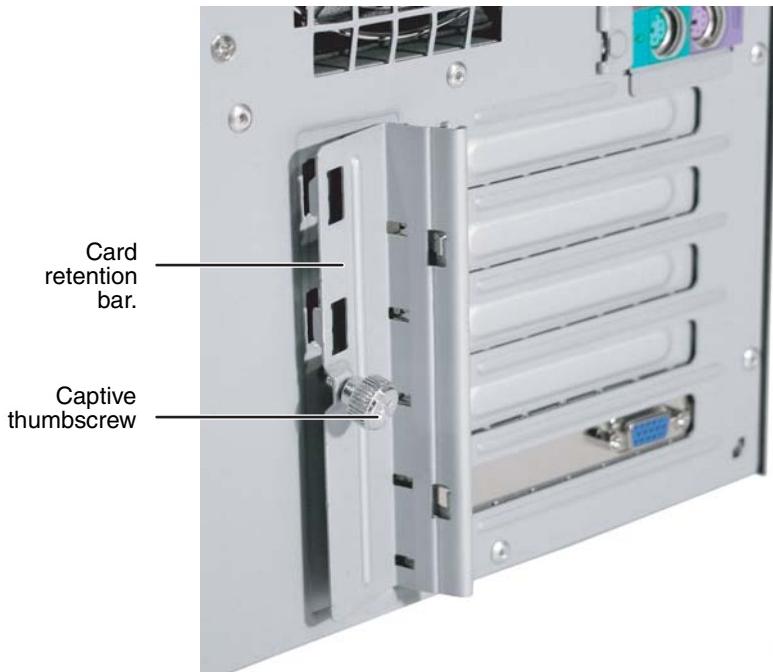
Do not touch the contacts on the bottom part of the expansion card.
Touching the contacts can cause electrostatic damage to the card.



- 6 Press the new card into the expansion slot. To help insert the card you can slightly rock the card end-to-end, but do not bend the card sideways.



- 7 Swing the card retention bar back into place and tighten the captive thumbscrew.



- 8** Connect any cables to the card. For more information, see the instructions in the card's documentation.
- 9** Follow the instructions in [“Closing the server case” on page 37](#).
- 10** See the card's documentation for software installation instructions.



Replacing the processor

The server is compatible with Intel® Celeron (533 MHz FSB), Pentium 4 (800 MHz FSB), and Pentium D (800 MHz FSB) processors with 256 KB (Celeron), 1 or 2 MB (Pentium 4), or 2×1 MB (Pentium D), L2 caches. The server automatically detects the processors each time you turn it on. Whenever you install new processors, you should first install the most current version of the BIOS. For more information, see “[Updating the BIOS](#)” on page 67.

Warning



Processors and heat sinks may be hot if the computer has been running. Also, there may be sharp edges on the heat sinks. Consider wearing protective gloves.

Caution

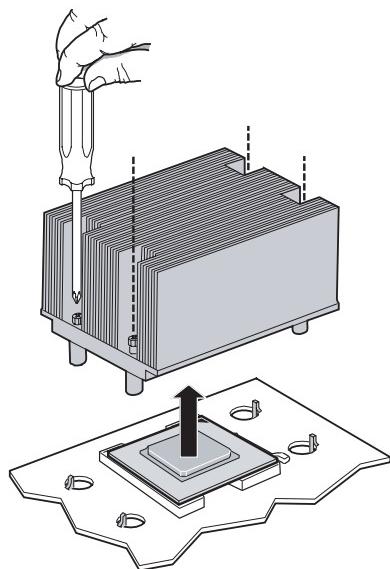


A heat sink must be installed on the processor. Installing a processor without a heat sink could damage the processor.



To replace the processor:

- 1 Install the most current BIOS version. For more information, see “[Updating the BIOS](#)” on page 67.
- 2 Follow the instructions in “[Preventing static electricity discharge](#)” on page 29.
- 3 Follow the instructions in “[Opening the server case](#)” on page 30.
- 4 Follow the instructions in “[Removing the processor air duct](#)” on page 33.
- 5 Loosen the four captive heat sink screws (one on each corner).



6 Remove the heat sink.

Caution

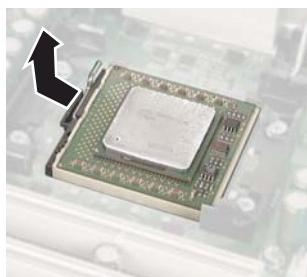


The heat sink has Thermal Interface Material (TIM) on the bottom. Be careful not to damage this material when you remove the heat sink from the processor.

If removing the heat sink also pulls the processor out of the processor socket, the processor could be damaged. Check the pins on the processor to make sure they are not bent or damaged.

If the heatsink sticks to the processor, twist it slightly to release it, then try again.

7 Press down on the processor locking lever, push it slightly away from the processor, then rotate the lever a full 135° to release the processor.



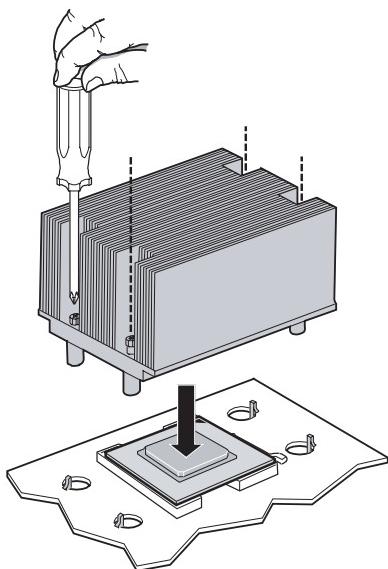
8 Remove the old processor.

9 Install the new processor into the processor socket. Make sure that:

- The processor release lever is open all the way (135° from the closed position)
- The triangular arrow on the corner of the processor aligns with the triangular hole on the corner of the processor socket
- The processor is flush with the socket.

10 Press the processor locking lever down until it clicks into place.

- 11** Place the heat sink on the processor, making sure the Thermal Interface Material (TIM) is aligned between the heat sink and the processor.



- 12** Line up the four captive screws with the four posts surrounding the processor, then gradually and evenly tighten the four captive screws to secure the heat sink to the system board.
- 13** Follow the instructions in “[Installing the processor air duct](#)” on page 34.
- 14** Follow the instructions in “[Closing the server case](#)” on page 37.



Replacing a power supply module

If your server uses the optional hot-swappable, redundant power supplies and one of the two power supplies fails, the other power supply module supports the server while you replace the failed module. You do not need to turn off the server or disconnect peripheral devices to replace a failed power supply module.

Warning



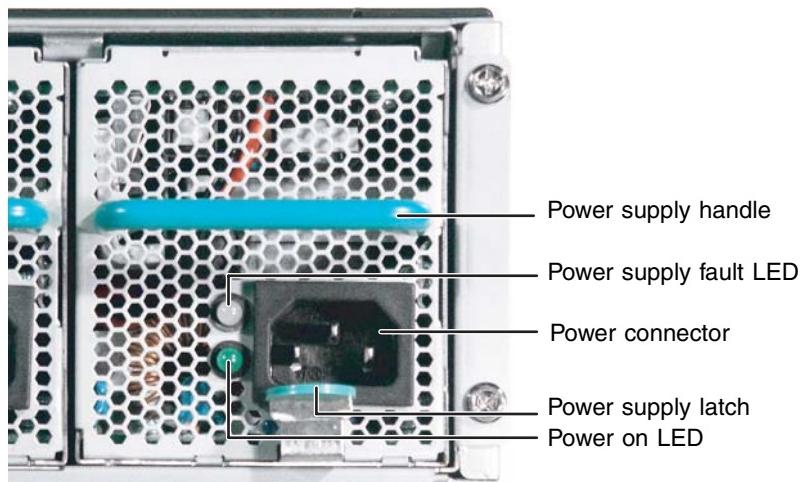
The power supply modules in this server contain no user-serviceable parts. Only a qualified computer technician should service the power supply modules.

Your server comes with 3-wire AC power cords fitted with the correct plug style for your region. If this plug does not match the connector on your surge protector, UPS, or wall outlet, do not attempt to modify the plug in any way. Use a UPS or wall outlet that is appropriate for the supplied AC power cords.



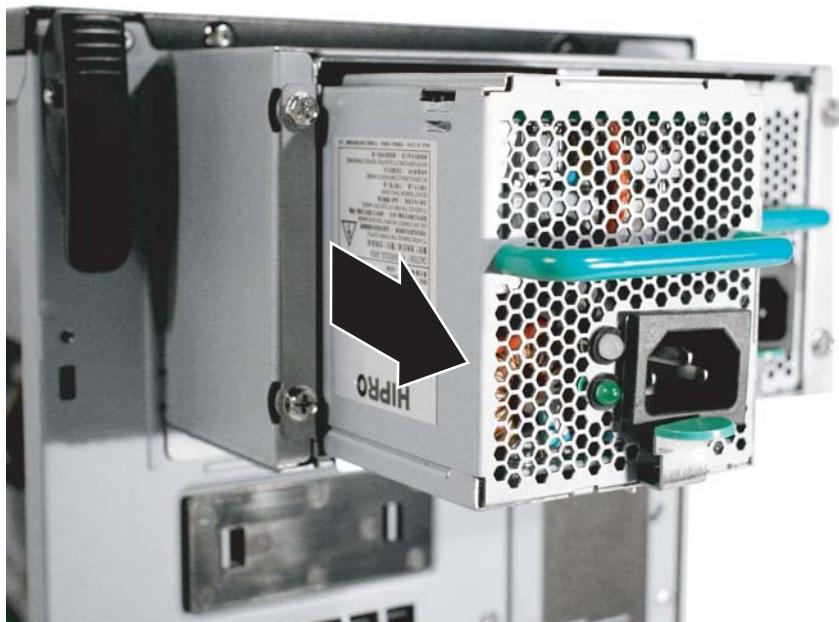
To replace a power supply module:

- 1 If you only have one power supply module, turn off your server.
- 2 If you have two power supply modules, examine the LED indicators on the back of each power supply module to identify the failed module. The power supply module has failed if the orange (right) LED indicator is on.



- 3 Unplug the power cord from the failed power supply module.

- 4** While pressing the green latch on the power supply module, grasp the handle and pull the module straight out from the server.



- 5** Slide the new power supply module into the empty power supply bay until the green latch snaps into place.
- 6** Plug the power cord into the new power supply module.



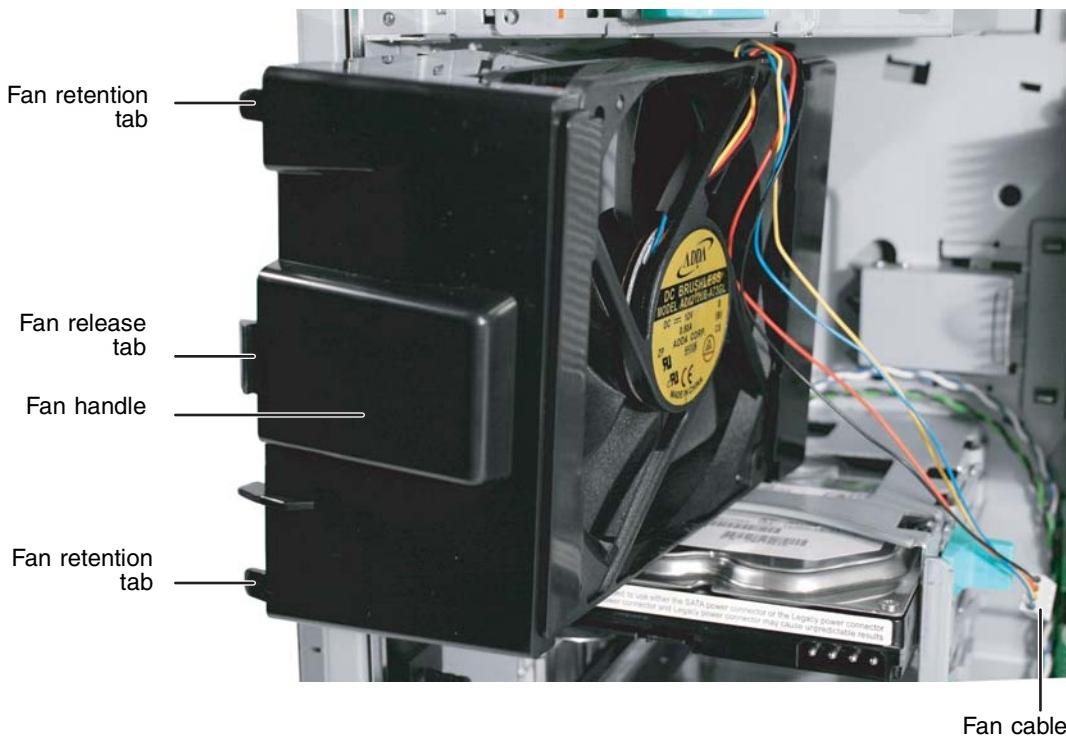
Replacing a fan



Make sure that you replace a fan with an identical replacement fan.

To replace a front fan:

- 1 Follow the instructions in “[Preventing static electricity discharge](#)” on page 29.
- 2 Follow the instructions in “[Opening the server case](#)” on page 30.
- 3 Remove the processor air duct by following the instructions in “[Removing the processor air duct](#)” on page 33.
- 4 Unplug the fan cable from the fan connector on the system board.



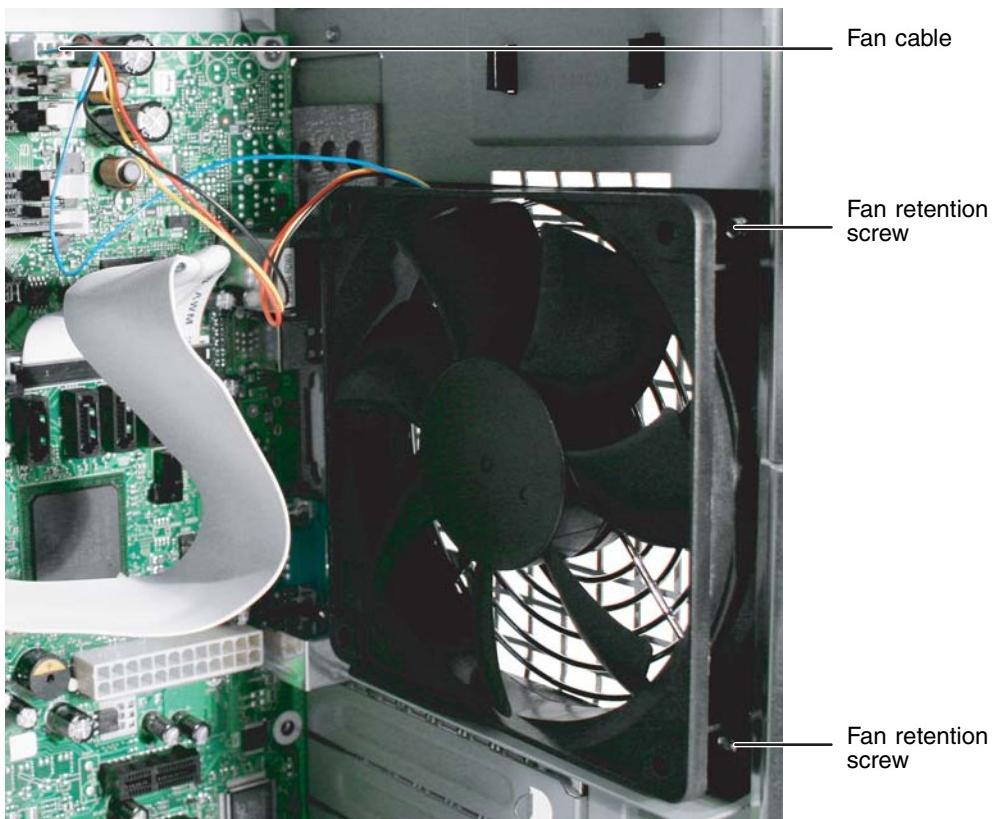
- 5 Grasp the fan handle and press the fan release tab, then disengage the fan and move it away from the chassis.
- 6 Pull the fan from the chassis.

- 7 Insert the new fan into the opening left by the old fan, then engage the fan retention tabs and fan release tab with the chassis until it snaps into place.
- 8 Plug the fan cable into the fan connector on the system board.
- 9 Replace the processor air duct by following the instructions in “[Installing the processor air duct](#)” on page 34.
- 10 Follow the instructions in “[Closing the server case](#)” on page 37.



To replace a back fan:

- 1 Follow the instructions in “[Preventing static electricity discharge](#)” on page 29.
- 2 Follow the instructions in “[Opening the server case](#)” on page 30.
- 3 Unplug the fan cable from the fan connector on the system board.



- 4 Unscrew the four fan retention screws holding the fan to the back of the chassis.
- 5 Pull the fan from the chassis, noting the orientation.
- 6 Insert the new fan into the chassis, then replace the fan retention screws.

Important



Make sure that the new fan is oriented the same way (air flow) as the old fan.

- 7 Plug the fan cable into the fan connector on the system board.
- 8 Follow the instructions in “[Closing the server case](#)” on page 37.



Replacing the CMOS battery

If the server clock does not keep time or the settings in the BIOS Setup utility are not saved when you turn off the server, replace the CMOS battery with an equivalent battery.

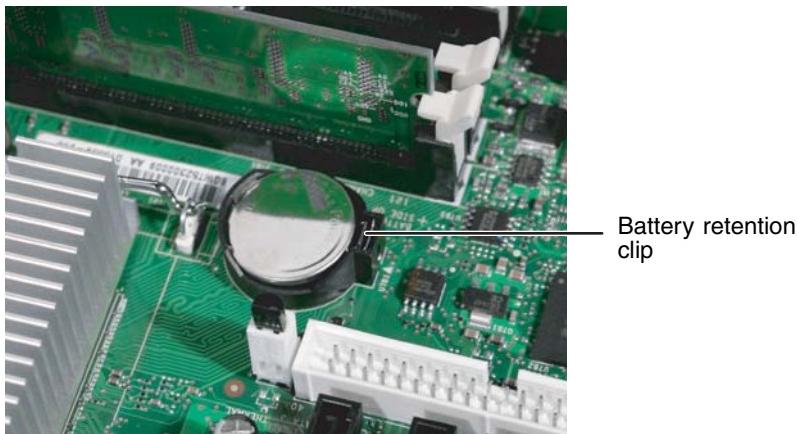
Warning



There is a danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type of battery recommended by the manufacturer. Dispose of used batteries following the manufacturer's instructions.

To replace the battery:

- 1 Print the appendix for [BIOS Settings](#) in this guide.
- 2 Follow the instructions in [“Opening the BIOS Setup utility” on page 66](#).
- 3 Record the BIOS settings on your printout, then close the utility.
- 4 Turn off your server, then follow the instructions in [“Preventing static electricity discharge” on page 29](#).
- 5 Follow the instructions in [“Opening the server case” on page 30](#).
- 6 Locate the old battery on the system board and note its orientation (see “System board” on page 5 for the general location of the battery). You will need to install the new battery the same way.



- 7 Push the battery retention clip away from the battery until the battery pops up.
- 8 Remove the old battery.

- 9** Make sure that the positive (+) side of the new battery is facing correctly, then press the new battery into the socket until it snaps into place.
- 10** Follow the instructions in “[Closing the server case](#)” on page 37.
- 11** Turn on the server.
- 12** Press F2 when the Gateway logo screen appears during startup. The BIOS Setup utility opens.
- 13** Restore any BIOS settings that you wrote down in [Step 3](#).
- 14** Save all your settings and close the BIOS Setup utility.

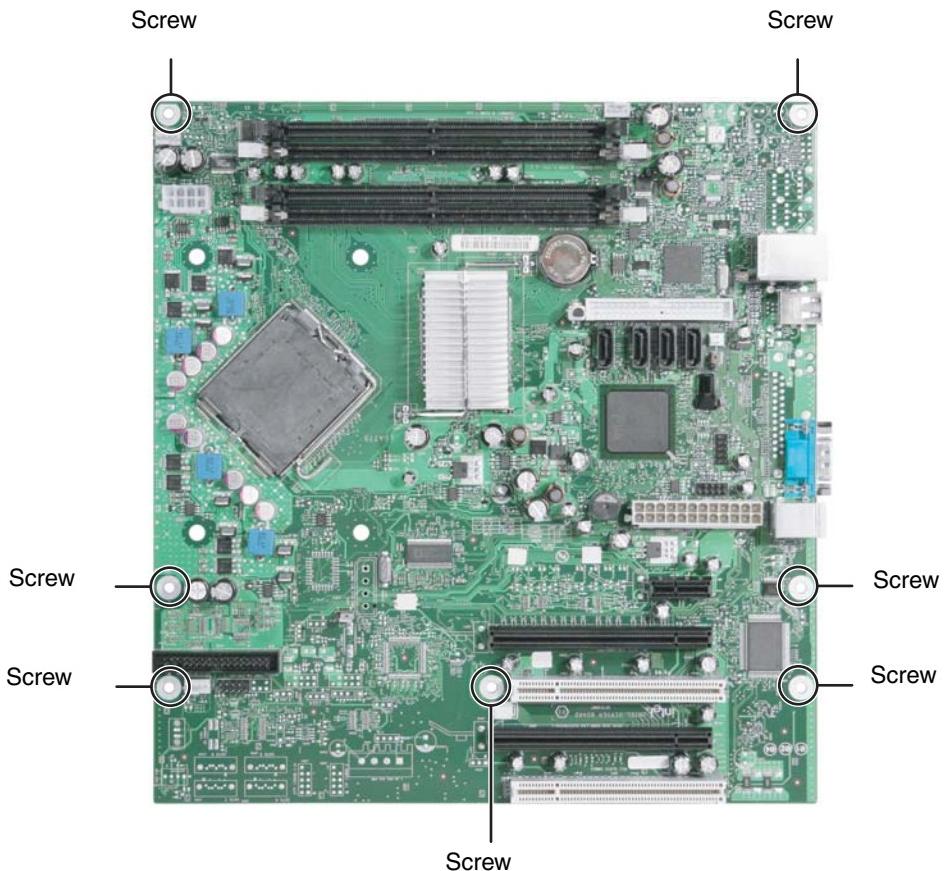


Replacing the system board

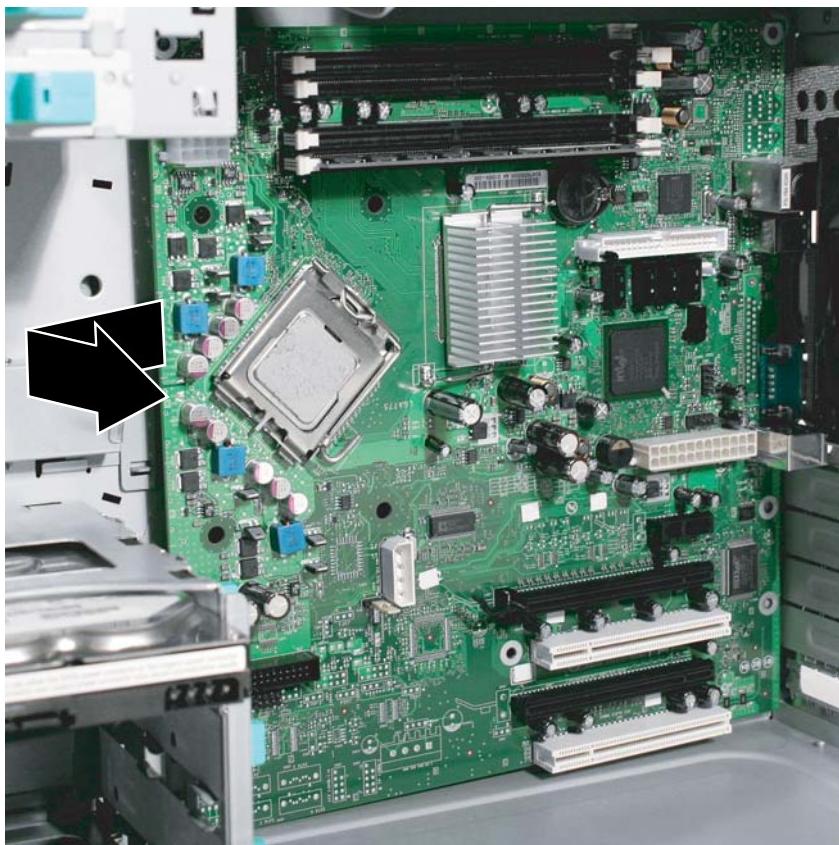
To replace the system board:

- 1** Follow the instructions in “[Preventing static electricity discharge](#)” on page 29.
- 2** Follow the instructions in “[Opening the server case](#)” on page 30.
- 3** Remove the processor air duct by following the instructions in “[Removing the processor air duct](#)” on page 33.
- 4** Remove the memory modules by following the instructions in “[Installing memory](#)” on page 45.
- 5** Remove all of the expansion cards by following the instructions in “[Installing PCI expansion cards](#)” on page 47.
- 6** Remove the heat sink and processor by following the instructions in “[Replacing the processor](#)” on page 51.
- 7** Disconnect the power and data cables from the system board, noting their locations and orientation. (You will reconnect the cables after you install the new board.)

- 8 Remove the seven (7) screws securing the system board to the case.



- 9** Pull the system board away from the case and carefully remove it, then place it in a static-free bag on a stable work surface.



- 10** Insert the new system board into the case, aligning the holes in the board with the threaded standoffs on the side of the case.
- 11** Secure the system board to the case with the seven (7) screws you removed previously.
- 12** Reinstall the memory by following the instructions in “[Installing memory](#)” on page 45.
- 13** Reinstall the processor and heatsink by following the instructions in “[Replacing the processor](#)” on page 51.
- 14** Connect the power and data cables.
- 15** Reinstall the expansion cards by following the instructions in “[Installing PCI expansion cards](#)” on page 47.
- 16** Follow the instructions in “[Closing the server case](#)” on page 37.

- 17** Turn on your server.
- 18** Press F2 when the Gateway logo screen appears during startup. The BIOS Setup utility opens.
- 19** Check BIOS settings to make sure that they detect the server's new hardware, then save your changes (if any) and close the BIOS Setup utility.



Chapter 5

Using the BIOS Setup Utility

- Opening the BIOS Setup utility
- Updating the BIOS
- Resetting the BIOS settings to their factory defaults
- Resetting the BIOS passwords

Opening the BIOS Setup utility

The BIOS Setup utility stores basic settings for your server. These settings include basic hardware configuration, resource settings, and password security. These settings are stored and saved even when the power is off.

Caution



The options in the BIOS Setup utility have been set at the factory for optimal performance. Changes to these settings will affect the performance of your server.

Before changing any settings, write them down in case you need to restore them later. You can record the settings on a printout of “[BIOS Settings](#)” on page 95.



To open the BIOS Setup utility:

- 1 Restart your server.
- 2 Press F2 when the Gateway logo screen appears during startup. The BIOS Setup utility opens.

When you select menu items, the Item Specific Help box on the right side of the screen displays specific information about the selection. The command bar across the bottom of the screen shows the keys you press to access help, navigate through the menus, and perform other tasks.

- 3 Select one of these menus (for a complete list of menu and sub-menu options, see “[BIOS Settings](#)” on page 95):
 - **Main** gives you access to basic information and settings related to your server’s hardware and configuration.
 - **Advanced** gives you access to information and settings for system resources, hardware, and server’s configuration.
 - **Security** gives you access to settings related to system access passwords. For more information, see “[Server security](#)” on page 19.
 - **Power** gives you access to settings for system power management.
 - **Boot** gives you access to information and settings for startup features and startup sequences.
 - **Exit** gives you access to options for closing the BIOS Setup utility.



Updating the BIOS

If you need a new version of the BIOS, you can download the BIOS update from support.gateway.com, then install the new version from Windows.



To update the BIOS:

- 1 Download the new version of the BIOS from support.gateway.com, then unzip the file.

Important



Make sure you write down the location of the unzipped files, so you can locate them later.

- 2 Print the appendix for **BIOS Settings** in this guide.
- 3 Restart your server, then press F2 when the Gateway logo screen appears during startup. The BIOS setup utility opens.
- 4 Record any custom BIOS settings on your printout, then exit the BIOS setup utility.
- 5 Continue to boot your server into Windows 2003 Server, then click the Windows-based BIOS update utility named WT72310J.15A.xxxx.xx.exe (or similar) (found in the location you wrote down after **Step 1**).

Windows restarts the server and automatically flashes the BIOS.

- 6 Enter any custom BIOS settings you recorded in **Step 4**, then save your changes and close the BIOS Setup utility.



Resetting the BIOS

After a successful BIOS update, if one or more applications do not subsequently run you may want to clear the settings and return to the old BIOS. The Clear BIOS jumper on the system board lets you return all BIOS settings to the factory defaults.

Important



Check to make sure that the custom settings previously recorded and entered are not causing the application problems before resetting the BIOS.

To reset the BIOS:

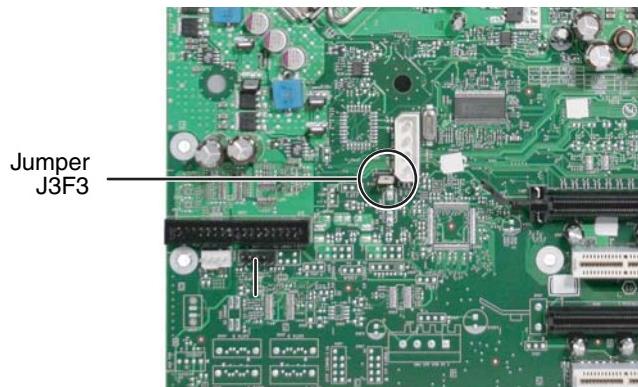
- 1 Print the appendix for [BIOS Settings](#) in this guide.
- 2 Restart your server.
- 3 Press F2 when the Gateway logo screen appears during startup. The BIOS Setup utility opens.
- 4 Record any custom BIOS settings on your printout.
- 5 Follow the instructions in [“Preventing static electricity discharge” on page 29](#).
- 6 Turn off the server, then disconnect the power cords and all other cables connected to the server.
- 7 Follow the instructions in [“Opening the server case” on page 30](#).

Caution



Moving the jumper while the power is on can damage your server. Always turn off the server and unplug the power cords and all other cables before changing the jumper.

- 8 Remove the jumper across pins 1-2 of header J3F3, then place the jumper across pins 2-3.



- 9** Follow the instructions in “[Closing the server case](#)” on page 37.
- 10** Reconnect the power cords and turn on the server. The BIOS memory is cleared.
- 11** Turn off the server, then disconnect the power cords and all other cables connected to the server.
- 12** Follow the instructions in “[Opening the server case](#)” on page 30
- 13** Place the jumper back onto pins 1-2.
- 14** Follow the instructions in “[Closing the server case](#)” on page 37.
- 15** Turn on the server. A message appears saying that the CMOS Date and Time are not set.
- 16** Press F1 to reset the BIOS to factory default settings.



Resetting BIOS passwords

To reset BIOS password(s), you must either reset and clear all BIOS settings, or use the Password Clear jumper. To reset BIOS passwords, follow the instructions in “[Resetting the BIOS](#)” on page 68.



To clear the BIOS password(s):

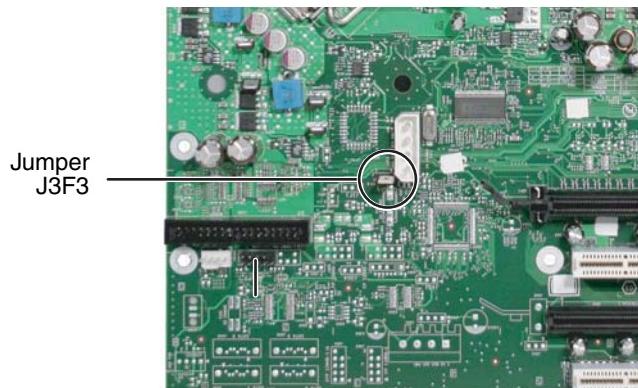
- 1** Turn off the server, then disconnect the power cords and all other cables connected to the server.
- 2** Follow the instructions in “[Opening the server case](#)” on page 30.

Caution



Moving the jumper while the power is on can damage your server.
Always turn off the server and unplug the power cords and all other cables before changing the jumper.

- 3 Remove the jumper across pins 1-2 of header J3F3, then place the jumper across pins 2-3.



- 4 Follow the instructions in “[Closing the server case](#)” on page 37.
- 5 Reconnect the power cords and turn on the server. The BIOS password(s) is cleared.
- 6 Turn off the server, then disconnect the power cords and all other cables connected to the server.
- 7 Follow the instructions in “[Opening the server case](#)” on page 30.
- 8 Place the jumper back onto pins 1-2.
- 9 Follow the instructions in “[Closing the server case](#)” on page 37.



Chapter 6

Troubleshooting

- Interpreting error messages and codes
- Troubleshooting
- Getting telephone support and training

If the suggestions in this chapter do not correct the problem, see “[Telephone support](#)” on page 86 for more information about how to get help.

Safety guidelines

While troubleshooting your server, follow these safety guidelines:

- Never remove the side panel while your server is turned on and while the modem cable and the power cords are connected.
- Do not attempt to open the monitor. To do so is extremely dangerous. Even if the power is disconnected, energy stored in the monitor components can be dangerous. Also, opening the monitor voids its warranty.
- Make sure that you are grounded correctly before opening the server case. For more information about preventing damage from static electricity, see “[Preventing static electricity discharge](#)” on page 29.
- After you complete any maintenance task where you have to open the server case, make sure that you close the case, tighten any screws, then reconnect all cables before you restart your server.

Warning



To avoid bodily injury, do not attempt to troubleshoot your server problem if:

- Power cords or plugs are damaged
- Liquid has been spilled into your server
- Your server was dropped
- The case was damaged

Instead, unplug your server and contact a qualified computer technician. If your server was damaged during shipment from Gateway, contact Gateway Customer Care.

Error messages

These messages often indicate procedural errors such as typing an incorrect keystroke or trying to save a file to a write-protected diskette. Some messages, however, may indicate a problem that requires further troubleshooting. These are general messages and do not represent all possible error messages you might receive.

Diskette drive 0 seek to track 0 failed

- Restart your server, then open the BIOS Setup utility by pressing and holding F2 while your server restarts. Make sure that the drive settings are correct.

Error loading operating system

- The master boot record may be corrupt. For troubleshooting information, see “[The master boot record is corrupted](#)” on page 81.

Hard disk controller failure

- Make sure that the data cables to the hot swap hard drive cage are connected securely.
- Restart your server, then open the BIOS Setup utility by pressing and holding F2 while your server restarts. Make sure that the correct drive type is selected.

Hard disk controller failure - press F1 to try reboot

- The drive controller may be defective. Press F1 to try to restart the server. For more information about running diagnostics on your hard drive, see your operating system’s documentation.

Insert bootable media device

- Restart your server, then open the BIOS Setup utility by pressing and holding F2 while your server restarts. Make sure that the correct hard drive is set as the first bootable drive in the Boot menu.
- See “[Your server does not recognize a SCSI drive](#)” on page 81 for a possible solution.

Invalid configuration information

- Restart your server, then open the BIOS Setup utility by pressing and holding F2 while your server restarts. Make sure that the settings are correct.
- Reset the BIOS. For more information, see “[Resetting the BIOS](#)” on page 68.

Invalid partition table

- The master boot record may be corrupt. For troubleshooting information, see “[The master boot record is corrupted](#)” on page 81.

Invalid password

- Enter your password again. Some passwords are case sensitive.
- If you do not know the password, you may need to reinstall the software you are trying to access.
- System startup passwords are stored in BIOS. If this password has been set and you do not know it, you may be able to reset the password through system board jumper settings. For more information, see “[Resetting BIOS passwords](#)” on page 69.

Memory errors were detected while the system started up

- See “[Memory errors were detected during server start up](#)” on page 82 for a possible solution.

Memory size error

- Restart your server, then open the BIOS Setup utility by pressing and holding F2 while your server restarts. Save the memory configuration.

Missing operating system

- The master boot record may be corrupt. For troubleshooting information, see “[The master boot record is corrupted](#)” on page 81.

System Event Log Full

- Clear the event log. To clear or view the event log, restart your server, then open the BIOS Setup utility by pressing and holding F2 while your server restarts. Select the **Advanced** menu, then select the **Event Log Control** menu.

Troubleshooting

First steps

Try these steps first before going to the following sections:

- Make sure that the power cords are connected to your server and an AC outlet and that the AC outlet is supplying power.
- If you use a UPS, make sure that it is turned on and is rated to handle the power required by your server.
- If you added or removed server components before the problem started, review the installation procedures you performed and make sure that you followed each instruction. You may need to remove the device, uninstall the device's software, then reinstall the device.
- If an error message appears on the screen, write down the exact message before calling Gateway Customer Care.
- Restart your server, then open the BIOS Setup utility by pressing and holding F2 while your server restarts. Check your configuration settings.
- If an error occurs in a program, see its documentation or online help.

Warning



To avoid bodily injury, do not attempt to troubleshoot your server problem if:

- Power cords or plugs are damaged
- Liquid has been spilled into your server
- Your server was dropped
- The case was damaged

Instead, unplug your server and contact a qualified computer technician. If your server was damaged during shipment from Gateway, contact Gateway Customer Care.

Battery replacement

If you have problems after installing a new CMOS battery, try each of the following items, closing the case and restarting the server after each try:

- Restart your server, then open the BIOS Setup utility by pressing and holding F2 while your server restarts. Correct any discrepancies.
- Remove the side panel by following the instructions in “[Opening the server case](#)” [on page 30](#), then make sure that all cables inside the case are attached securely. Also, make sure that the colored cable edges are aligned correctly and that the connectors do not miss any pins.

- If you have the correct test equipment, make sure that the new battery has power. Although unlikely, your new battery may be defective.

Beep codes

Whenever a recoverable error occurs during the power-on self-test (POST), the BIOS displays an error message that describes the problem. The BIOS also sounds a beep code (one long tone followed by two short tones) during POST if the video configuration fails (a faulty video controller) or if an expansion card is not functioning correctly. One short beep indicates the BIOS will boot the operating system. No error found.

A PCI expansion card (for example, a RAID controller) can also issue audible errors by itself, usually consisting of one long tone followed by a series of short tones. For more information on the beep codes issued, check the documentation for that device.

The following table shows POST error beep codes. Prior to system video initialization, BIOS uses these codes to inform users of error conditions.

Beeps	Description	Troubleshooting steps
1	Memory refresh timer error	Reseat the memory modules or replace with modules you know are good.
2	Parity error in the first 64 KB of memory.	Same as for 1 beep.
3	Base memory read/write test error	Same as for 1 beep.
4	System board timer not operational.	<p>Possible system board malfunction. To eliminate the possibility of an add in-card problem, remove all expansion cards.</p> <ul style="list-style-type: none"> ■ If the beep code occurs even when all expansion cards have been removed, the system board is at fault. ■ If the beep code does not occur when the expansion cards have been removed, one of the cards is causing the problem. Install the cards one at a time until the problem happens again. When the beep code returns, the most recent card you installed is at fault.
5	The processor on the system board generated an error.	<p>Try a known good processor in the processor socket.</p> <p>Same as for 4 beeps.</p>
6	The keyboard controller (8042) may be defective. The BIOS cannot switch to Protected mode.	<p>Remove the keyboard to see if the error goes away. If it does, try a known good keyboard.</p> <p>Same as for 4 beeps.</p>

Beeps	Description	Troubleshooting steps
7	General exception error (processor exception error).	Same as for 4 beeps. Same as for 5 beeps
8	Display memory error (system video adapter).	If the system video adapter is an add-in card, replace or reseat the video adapter. If the video adapter is integrated into the system board, the board may be faulty. Try using an add-in card.
9	The ROM checksum value does not match the value encoded in the BIOS.	Same as for 4 beeps.
10	The shutdown register for CMOS RAM failed.	Same as for 4 beeps.
11	The cache memory test failed.	Same as for 4 beeps.

DIM code checkpoints

The Device Initialization Manager (DIM) gets control at various times during BIOS POST to initialize different system buses. The following table describes the main checkpoints where the DIM module is accessed.

Checkpoint	Description
2A	Initialize different buses and perform the following functions: <ul style="list-style-type: none"> ▪ Reset, Detect, and Disable (function 0) — Disables all device nodes, PCI devices, and PnP ISA cards. It also assigns PCI bus numbers. ▪ Static Device Initialization (function 1) — Initializes all static devices that include manual configured onboard peripherals, memory and I/O decode windows in PCI-PCI bridges, and noncompliant PCI devices. Static resources are also reserved. ▪ Boot Output Device Initialization (function 2) — Searches for and initializes any PnP, PCI, or AGP video devices.
38	Initialize different buses and perform the following functions: <ul style="list-style-type: none"> ▪ Boot Input Device INitialization (function 3) — Searches for and configures PCI input devices and detects if system has standard keyboard controller. ▪ IPL Device Initialization (function 4) — Searches for and configures all PnP and PCI boot devices. ▪ General Device Initialization (function 5) — Configures all onboard peripherals that are set to an automatic configuration and configures all remaining PnP and PCI devices.

ACPI runtime checkpoints

ACPI checkpoints are displayed when an ACPI-capable operating system either enters or leaves a sleep state. The following table describes the types of checkpoints that may occur during ACPI sleep or wake events:

Checkpoint	Description
AC	First ASL checkpoint. Indicates that the system is running in ACPI mode.
AA	System is running in APIC mode.
01, 02, 03, 04, 05	Entering sleep state S1, S2, S3, S4, or S5.
10, 20, 30, 40, 50	Waking from sleep state S1, S2, S3, S4, or S5.

BIOS

The settings in the BIOS Setup utility are not retained

- Replace the CMOS battery. For more information, see “[Replacing the CMOS battery](#)” on page 59.

CD or DVD drive

Your server does not recognize a CD, DVD, or the CD or DVD drive

- Restart your server, then open the BIOS Setup utility by pressing and holding F2 while your server restarts. Make sure that the IDE controllers are enabled. For more information, see “[Using the BIOS Setup Utility](#)” on page 65.
- Reinstall the device driver. For more information, see *Using Your System Companion CD*.
- Make sure that the drive is configured correctly by following the instructions in the drive’s documentation.
- Open your server case and make sure that the cables are connected correctly to the CD or DVD drive and the IDE connector on the system board or controller card.

Your CD or DVD drive tray does not open

- Press a straightened paper clip wire into the CD or DVD drive’s manual eject hole. The drive tray opens.
- If this problem happens frequently while the server is turned on, the drive may be defective.

Diskette drive

The diskette drive is not recognized

- Restart your server.
- Open your server case and make sure that the cables are connected correctly to the diskette drive and the system board. The red-striped edge of the data ribbon cable indicates Pin 1 and corresponds with Pin 1 on the diskette drive (typically on the side farthest from the power supply connection). If necessary, reverse one end of the cable so the red-striped edge of the data ribbon cable faces Pin 1 on the diskette drive. Make sure that the pins are not bent or misaligned. For more information, see “[Installing drives](#)” on page 38.

The diskette drive LED is lit continuously

- Remove the diskette from the drive. If the light stays on, try restarting your server.
- Open your server and make sure that the cables are connected correctly to the diskette drive and the system board. The red-striped edge of the data ribbon cable indicates Pin 1 and corresponds with Pin 1 on the diskette drive (typically on the side farthest from the power supply connection). If necessary, reverse one end of the cable so the red-striped edge of the data ribbon cable faces Pin 1 on the diskette drive. Make sure that the pins are not bent or misaligned. For more information, see “[Installing drives](#)” on page 38.

Expansion cards

Your server does not recognize an expansion card

- Restart your server.
- Make sure that you have installed the necessary software or driver. For more information, see the card’s documentation.
- Reseat the card. For more information, see “[Installing PCI expansion cards](#)” on page 47.
- Install the card in a different slot.

Hard drive

The hard drive cannot be accessed, or you receive a “General failure reading drive C” error message

- If a diskette is in the diskette drive, eject it and restart your server by pressing the reset button.
- Restart your server by pressing the reset button.
- Open your server and make sure that the cables are connected correctly to the hard drive.
- If your server has been subjected to static electricity or physical shock, you may need to reinstall the operating system.

You receive a “Non-system disk” or “disk error” error message

- Eject the diskette from the diskette drive, then press **ENTER**.
- Make sure that your hard drive has an active partition. For more information, see “[The master boot record is corrupted](#)” on page 81.

Your server does not recognize a SCSI drive

- Make sure that the SCSI controller is enabled in the BIOS Setup utility.
- Reinstall the device driver. For more information, see *Using Your System Companion CD*.
- Change the drive's SCSI address to one that is not being used by your server. For more information about SCSI device configurations, see your drive's documentation.
- Run SCSI Verify in the SCSI BIOS. For more information about the SCSI BIOS, see the SCSI controller's documentation.
- Reseat the drive.
- Open your server and reseat the drive controller card. Also make sure that the controller card and power cables are connected to the drive. For more information, see “[Installing PCI expansion cards](#)” on page 47 or your controller card’s documentation.
- Make sure that the power cable and SCSI cable are attached securely to the drive cage.
- Make sure that the last device on the SCSI cable is correctly terminated. For more information about SCSI device configurations, see the device’s documentation.
- Use a different SCSI cable.

You are having problems with a SATA drive

- For normal SATA drives (not SATA RAID), check the BIOS setup utility to see if the BIOS has recognized the drive.
- Make sure that the power cable and SATA cables are attached securely to the drive cage.
- If the drive is not detected, try a different SATA port.
- Try swapping SATA cables between drives to determine if the cable is defective.
- Try listening to the drive to determine if the drive is spinning up. If not, the drive may be defective.

The master boot record is corrupted

- In a Windows network operating system, repair the master boot record using FDISK.

**To repair the master boot record:**

- At a DOS command prompt, type **fdisk/mbr**, then press **ENTER**.



Internet

See also *Modem*.

You cannot connect to the Internet

- Make sure that your account with your Internet Service Provider (ISP) is set up correctly. Contact your ISP technical support for help.
- Make sure that you do not have a problem with your modem. For more information, see “[Modem \(telephone dial-up\)](#)” on page 82.

Keyboard

Liquid has been spilled into the keyboard

- If you spilled liquid into the keyboard, turn off your server and unplug the keyboard. Clean the keyboard and turn it upside down to drain it. Let the keyboard dry before using it again. If the keyboard does not work after it dries, you may need to replace it. This type of damage is not covered by your server's warranty.

Memory

Memory errors were detected during server start up

- Open your server and make sure that the memory modules are installed correctly. For more information, see “[Installing memory](#)” on page 45.
- A memory module may be defective. If possible, try another memory module and see if the error repeats.

Modem (telephone dial-up)

See also *Internet*.

Your modem does not dial or does not connect

- Make sure that your server is connected to the telephone line and the telephone line has a dial tone.
- Make sure that the modem cable is less than 6 feet (1.8 meters) long.

- Remove any line splitters or surge protectors from your telephone line, then check for a dial tone by plugging a working telephone into the telephone jack.
- If you have additional telephone services such as call waiting, call messaging, or voice mail, make sure that all messages are cleared and call waiting is disabled before using the modem. Contact your telephone service to get the correct code to temporarily disable the service. Also make sure that the modem dialing properties are set correctly.



To check the dialing properties in Windows 2000 Server:

- 1 Click **Start**, **Settings**, then click **Control Panel**. The *Control Panel* window opens.
- 2 Double-click the **Modems** icon, then click **Dialing Properties**. The *Dialing Properties* dialog box opens.
- 3 Make sure that all settings are correct.



- Make sure that you are not using a digital, rollover, or PBX line. These lines do not work with your modem.
- Check for line noise (scratchy, crackling, or popping sounds). Line noise is a common problem that can cause the modem to connect at a slower rate, abort downloads, or even disconnect. The faster the modem, the less line noise it can tolerate and still work correctly.

Listen to the line using your telephone. Dial a single number (such as 1). When the dial tone stops, listen for line noise. Wiggle the modem cable to see if that makes a difference. Make sure that the connectors are free from corrosion and all screws in the wall or telephone jack are secure.

You can also call your telephone service and have your telephone line checked for noise or low line levels.

- Try connecting with the modem at a lower connection speed. If reducing the connection speed lets you connect, contact your telephone service. The telephone line may be too noisy.
- Try another telephone line (either a different telephone number in your business or a telephone line at a different location). If you can connect on this line, call your telephone service to fix the original line.

Your 56K modem does not connect at 56K

Current FCC regulations restrict actual data transfer rates over public telephone lines to 53K. Other factors, such as line noise, telephone service provider equipment, or ISP limitations, may lower the speed even further.

If your system has a v.90 modem, the speed at which you can upload (send) data is limited to 33.6K. If your system has a v.92 modem, the speed at which you can upload data is limited to 48K. Your ISP may not support 48K uploads.

The modem is not recognized by your server

- If the modem shares the telephone line with another device, make sure that the telephone line is not in use (for example, someone is on the telephone, or another modem is in use).
- Shut down and restart your server.
- Reinstall the modem device driver. For more information, see *Using Your System Companion CD*.
- Open your server and reseat the modem. For more information, see “[Installing PCI expansion cards](#)” on page 47.

Monitor

Your server is running but there is no picture

- Adjust the brightness and contrast controls to the center position.
- Make sure that the monitor is plugged in and turned on. If the monitor is turned on, the power LED should be lit.
- Check the port and cable for bent or damaged pins.
- Connect your monitor to another computer, or connect a monitor that you know works to your server.

The color is not uniform

Make sure that the monitor warms up for at least 30 minutes before making a final judgment about color uniformity.

Make sure that:

- The monitor is not positioned too close to another monitor, electric fan, or fluorescent light.
- You demagnetize the screen using the monitor’s degauss feature. For more information on degauss, see the monitor’s documentation.

A horizontal line or wire is visible across the monitor screen

The monitor may use thin *damper* wires, located approximately 1/3 of the way from the upper and lower screen edges, to stabilize the internal aperture grille. These wires are most obvious when the monitor displays a white background. The aperture grille allows more light to pass through the screen for brighter colors and greater luminescence. The damper wire is a critical part of the overall monitor design and does not negatively affect the monitor's function.

Power

You press the power button, but the server does not turn on

- If the power button LED is green, the server is turned on, but you may not be seeing an image on the monitor. For monitor troubleshooting, see “[Monitor](#)” on page 84.
- If your server is equipped with redundant power supply modules, check the LEDs on the power supply modules.
- If your server is plugged into a UPS, make sure that the UPS is connected securely to an electrical outlet, turned on, and working correctly. One way to check this is to plug the server directly into a wall outlet, bypassing the UPS.
- Make sure that the electrical outlet is working by plugging a working device, such as a lamp, into the outlet, then turning it on to test the outlet.
- Open your server and make sure that the power supply cable and power button cable are connected correctly to the system board.

When you turn on the server, it makes several short beeps

- The short beeps indicate the server has encountered some type of error. See “[Beep codes](#)” on page 76.

Processor

Your server does not recognize a new processor

- Make sure that the processor is fully seated in its socket. The processor should be recognized automatically if it is installed correctly.

Telephone support

Before calling Gateway Customer Care

If you have a technical problem with your server, follow these recommendations before contacting Gateway Customer Care:

- Make sure that your server is connected correctly to a grounded AC outlet that is supplying power.
- If a peripheral device, such as a keyboard or mouse, does not appear to work, make sure that all cables are plugged in securely.
- If you have recently installed hardware or software, make sure that you have installed it following the instructions provided with it. If you did not purchase the hardware or software from Gateway, see the manufacturer's documentation and technical support resources.
- If you have "how to" questions about using a program, see:
 - The program's online Help
 - The program's documentation
 - Your operating system's documentation
 - The software or hardware manufacturer's Web site
- See ["Troubleshooting" on page 75](#).
- Have your client ID, serial number (located on the back of your server case), and order number available, along with a detailed description of your issue, including the exact text of any error messages, and the steps you have taken.
- The COA, or *Certificate of Authenticity*, if required, is normally located on the side panel of the server.
- Make sure that your server is nearby at the time of your call. The technician may have you follow appropriate troubleshooting steps.
- Consider using Gateway's Internet Customer Care. Gateway's Web site has FAQs, tips, and other technical help. You can also use the Web site to e-mail Customer Care. For more information, visit Gateway's Customer Care Web site at support.gateway.com.

Telephone support

Gateway offers a wide range of customer service, technical support, and information services.

Telephone numbers

You can access the following services through your telephone to get answers to your questions:

Resource	Service description NEW	How to reach
Gateway's fee-based software tutorial service	Get tutorial assistance for software issues.	800-229-1103 (charged to your credit card)
Gateway Customer Care	Talk to a Gateway Customer Care representative about a non-tutorial technical support question.	877-485-1464 (US)(option #6) 800-846-3609 (Canada and Puerto Rico) 605-232-2191 (all other countries)
Sales, accounting, and warranty	Get information about available systems, pricing, orders, billing statements, warranty service, or other non-technical issues.	800-846-2000 (US) 888-888-2037 (Canada)

Tutoring and training

Gateway's Customer Care professionals cannot provide hardware and software training. Instead, Gateway recommends the following training resources.

Resource	Service description	For more information
Gateway Learning Libraries	A variety of courses and tutorials are available on CD. Select from several easy-to-use learning libraries.	www.gateway.com/training

Appendix A

Server Specifications

The following specifications are for the standard configuration. Your server may contain optional equipment. All specifications are subject to change.

System specifications

Case size	Tower (with standard power supply): 8 × 16.5 × 19.8 inches (203.2 × 419.2 × 502.7 cm) Tower (with redundant power supplies) 8 × 16.5 × 22.2 inches (203.2 × 419.2 × 563 cm)
Weight	Approximately 32 lbs (14.5 kg) (varies by configuration)
Fans	2 chassis fans
Ports	<ul style="list-style-type: none"> ▪ PS/2 keyboard/mouse (2) ▪ USB (6) ▪ Serial (1) ▪ VGA (1) ▪ RJ-45 LAN (1)
Drives (removable media)	<p>Two 5.25" external drive bays. Two 3.5" external drive bays. Optional drives:</p> <ul style="list-style-type: none"> ▪ 3.5-inch diskette ▪ CD-ROM, CD-R, or DVD-ROM ▪ Tape drive
Hard Drives	Support for four, SATA, or NSCA SCSI hard drives (standard)
Card sizes	Supports full-length, full-height PCI expansion cards
Power supply modules	Single 400 W fixed power supply (standard). Two 520 W, hot-swap, redundant power supply modules (optional).)
Operating systems	<p>Supports Windows Server 2003 (all) and Small Business Server 2003 (all)</p> <p>Compatible with:</p> <ul style="list-style-type: none"> ▪ Windows NT ▪ Novell NetWare 5.1 and 6.5 ▪ Red Hat Linux Enterprise 3.0 and 3.0 EM64T ▪ SuSe Linux Enterprise 9.0 and 9.0 EM64T
Certifications	<ul style="list-style-type: none"> ▪ FCC Class A ▪ UL ▪ cUL

System board specifications

Processor	604-pin socket (FC-mPGA4 package, 90 nM technology) 533 MHz or 800 MHz Front Side Bus (FSB) Dual-core support (Pentium D only) Supports Intel Celeron, Pentium 4, or Pentium D CPUs with 1024 KB cache
Chipset	Intel E7230 chipset <ul style="list-style-type: none"> ▪ Supports 533 MHz or 800 MHz Front Side Bus (FSB) ▪ E7230 Memory Controller Hub (MCH) ▪ Intel 82801GR I/O Controller Hub7 (ICH-7)
Memory	Four DIMM slots support as many as 8 GB total memory <ul style="list-style-type: none"> ▪ DDR2 533MHz ECC unbuffered DIMM modules ▪ DIMM organization x72 ECC ▪ 240-pin DIMMs (256 MB, 512 MB, 1 GB, or 2 GB only)
PCI device/slot	PCI slots: <ul style="list-style-type: none"> ▪ Slot 1 - x1 PCI Express ▪ Slot 2 - x8 PCI Express ▪ Slot 3 - PCI 32-bit ▪ Slot 4 - x4 PCI Express ▪ Slot 5 - PCI 32-bit
Video	XGI Z7 Volari 16MB 16-bit PCI Video Adapter card
RAID	Four Serial ATA 150 ports from the ICH7 supporting entry level RAID functionality, including RAID levels 0, 1, 5, and 10.
LAN	On-board Marvel Ethernet NIC <ul style="list-style-type: none"> ▪ 10Base-T/100Base-TX/1000Base-T ▪ PXE support
ACPI	ACPI compliance Supports S0, S1, S4, S5
Hardware Monitor	Main logic board sensors: <ul style="list-style-type: none"> ▪ Voltage sensors ▪ Temperature sensors ▪ Adaptive fan speed control and fan speed detection

Environmental specifications

The following specifications identify maximum environmental conditions. At no time should the server run under conditions which violate these specifications.

Variable	Requirements
Temperature	Maximum rate of change: 18°F (10°C) per hour Nonoperating: -4° to 140°F (-20° to 60°C) Operating: 41° to 95°F (5° to 35°C); derated 0.9°F (0.5°C) for every 1,000 feet (305 meters)
Altitude	12,500 feet (3,810 meters) maximum
Humidity	Operating: 20% to 80% relative, non-condensing Nonoperating: 20% to 90% relative non-condensing at 86° F (30° C)
Shock	Operating: 2.0 g, 11 msec, ½ sine Packaged: Operational after 18-inch free fall (cosmetic damage might occur)
AC input power	100-127 V, 10.0 A, 50/60 Hz max. 200-240 V, 5.0 A, 50/60 Hz max.

Electronic specifications

Memory map

Address Range (hex)	Amount	Function
0 to 07FFFFFFh	640 KB	DOS region, base system memory
0A0000h to 0BFFFFFFh	128 KB	Video or SMM memory
0C0000h and 0DFFFFFFh	128 KB	Expansion card BIOS and buffer area
0E0000h to 0FFFFFFh	128 KB	System BIOS
0E0000h to 0EFFFFFFh	2 MB	Extended system BIOS
FC000000h to FFFFFFFFh	64 MB	PCI memory space

Interrupts

The following table reflects a typical configuration, but you can change these interrupts. Use this information to determine how to program each interrupt. The actual interrupt map is defined using configuration registers in the ICH5-R (I/O controller). I/O Redirection Registers in the I/O APIC are provided for each interrupt signal. The signals define hardware interrupt signal characteristics for APIC messages sent to local APIC(s).

Important



If you disable an IDE controller to free the interrupt for that controller, you must physically unplug the IDE cable from the system board. Simply disabling the drive by configuring the BIOS does not make the interrupt available.

Interrupt	Description
IRQ0	Timer/counter, HPET #0 in legacy replacement Mode. In APIC mode, cascade from 8259 controller 1
IRQ1	Keyboard controller
IRQ2	Slave controller INTR output. In APIC mode Timer/counter, HPET #0
IRQ3	Serial port A
IRQ4	Serial port B
IRQ5	Parallel port

Interrupt	Description
IRQ6	Diskette controller
IRQ8	Real-time clock/HPET#1 in legacy replacement mode
IRQ9	Generic, Option for SCI
IRQ10	Generic, Option for SCI
IRQ11	HPET #2, option for SCSI, TCO
IRQ12	Mouse controller
IRQ13	System interrupt/FERR
IRQ14	Primary ATA, legacy mode
PIRQA	USB 1.1 controller 1 and 4
PIRQB	Video
PIRQC	USB 1.1 controller 3, Native IDE, SATA
PIRQD	USB 1.1 controller 2
PIRQE	Option for SCI, TCO, HPET #0,1,2
PIRQF	Option for SCI, TCO, HPET #0,1,2
PIRQG	Option for SCI, TCO, HPET #0,1,2
PIRQH	USB 2.0 EHCI controller 1, Option for SCI, TCO, HPET #0,1,2
Ser IRQ	SIO3

Additional specifications

For more information about your server, such as memory size, hard drive size, and processor type, visit Gateway's *Support* page at support.gateway.com. The *Support* page also has links to additional Gateway documentation and detailed specifications for your own server.

Appendix B

BIOS Settings

You can print this appendix, then record your custom BIOS settings on the printout.


To view all BIOS settings:

- 1** Restart your server.
- 2** Press F2 when the Gateway logo screen appears during startup. The BIOS Setup utility opens.
- 3** Select menus and submenus to display setting information.



BIOS menu	BIOS submenu	Setting	Value
Maintenance			
		Clear All Passwords	
		Fixed Boot Sector	Normal
			Write protect
		Use Maximum Multiplier (for frequency-limited processors the maximum multiplier is programmed in automatic mode).	Automatic
			Disable
		Intel Enhanced Debug	Disable
			Enable
		CPU Frequency Multiplier	
		Processor Stepping	
		Microcode Revision	
		Ratio Actual Value	
Main			
		System Information:	
		BIOS Version	
		Processor (Type, Speed)	
		System Bus Speed	
		System Memory Speed	
		L2 Cache RAM	
		Hyper-Threading Technology	Enabled
			Disabled

BIOS menu	BIOS submenu	Setting	Value
		System Memory (Total)	
		Memory Mode	
		Memory Channel A Slot 0	
		Memory Channel A Slot 1	
		Memory Channel B Slot 0	
		Memory Channel B Slot 1	
		System Time	HH:MM:SS
		System Date	DAY MM/DD/YYYY
		Language	English
			French
			German
			Italian
			Spanish
Additional system information:			
Manufacturer:			
Product Name:			
Version:			
Serial Number:			
Desktop board information:			
Manufacturer:			
Product Name:			
Version:			
Serial Number:			
Chassis information:			
Manufacturer:			
Version:			
Serial Number:			
Asset Tag:			
Advanced			
Boot Configuration			
		Numlock	Off
			On

BIOS menu	BIOS submenu	Setting	Value
		Max CPUID Value Limit	Disable Enable
		Display Setup Prompt	On Off
	Peripheral Configuration		
		Serial Port	Disable Enable
		On-board LAN	Disable Enable
		ASF 2.0	Disable Enable
		TPM 1.2	Disable Enable
	Drive Configuration		
		Use Automatic Mode	Disabled Enabled
		ATA/IDE Mode	Legacy Enhanced
		Configure SATA as	IDE RAID
		S.M.A.R.T.	Disable Enable
		SATA Port 0	Value
		SATA Port 1	Value
		SATA Port 2	Value
		SATA Port 3	Value
		Primary Master	Value
		Primary Slave	Value
		Hard Disk Pre-Delay	Value (Default = 0)

BIOS menu	BIOS submenu	Setting	Value
	Floppy Configuration		
		Diskette Controller	Automatic Disable Enable
		Diskette Write Protect	Disable Enable
		Floppy Type	1.44MB 2.88MB
	Event Log Configuration		
		View Event Log	
		Clear Event Log	Disable Enable
		Event Logging	Disable Enable
		Mark Events as Read	Disable Enable
	Video Configuration		
		Primary Video Adapter	Auto Ext PCIE Graphics (PEG) Ext PCI Graphics
	Chipset Configuration		
		PCI Express Configuration	Link to sub-menu on page 102

BIOS menu	BIOS submenu	Setting	Value
		PCI Latency Timer	32 64 96 128 160 192 224 248
	Management Configuration		
		ASF Support	Enable Disable
		Enter AMT BX Setup	Disable Enable
	USB Configuration		
		USB 2.0	Enable Disable
		USB ZIP Emulation Type	Floppy Hard Disk
Security			
		Set Supervisor Password	Installed Not Installed
		Set User Password	Installed Not Installed
		User Access Level	No Access View Only Limited Access Full Access
		Expansion Card Text	Disable Enable
		Chassis Intrusion	Disable Enable

BIOS menu	BIOS submenu	Setting	Value
		XD Technology	Disable Enable
Power		After Power Failure	Stay off Last state Power on
		Wake on LAN from S5	Stay off Power on
		ACPI Suspend State	S1 State S3 State
Boot		Boot Menu Type	Normal Advance
		Boot Device Priority	CD/DVD-ROM Drive Floppy Drive Hard Disk Drive Ethernet
		Hard Drive Order	(Value)
		CD/DVD-ROM Drive Order	(Value)
		Removable Drive Order	(Drive order)
		Boot to Optical Devices	Disable Enable
		Boot to Removable Devices	Disable Enable
		Boot to Network	Disable Enable
		USB Boot	Disable Enable

Appendix B:

The following second level submenu is accessed from the submenu indicated in the first column.

BIOS submenu	BIOS 2nd level submenu	Setting	Value
	PCI Express Configuration		
		PEG Negotiated Width	(Value)
		Compliance Test Pattern	Enable Disable

Appendix C

Safety, Regulatory, and Legal Information

- Safety information
- Legal and Regulatory Information

Important safety information

Your Gateway system is designed and tested to meet the latest standards for safety of information technology equipment. However, to ensure safe use of this product, it is important that the safety instructions marked on the product and in the documentation are followed.

Warning



Always follow these instructions to help guard against personal injury and damage to your Gateway system.

Setting up your system

- Read and follow all instructions marked on the product and in the documentation before you operate your system. Retain all safety and operating instructions for future use.
- Do not use this product near water or a heat source such as a radiator.
- Set up the system on a stable work surface.
- The product should be operated only from the type of power source indicated on the rating label.
- If your computer has a voltage selector switch, make sure that the switch is in the proper position for your area. The voltage selector switch is set at the factory to the correct voltage.
- Openings in the computer case are provided for ventilation. Do not block or cover these openings. Make sure you provide adequate space, at least 6 inches (15 cm), around the system for ventilation when you set up your work area. Never insert objects of any kind into the computer ventilation openings.
- Some products are equipped with a three-wire power cord to make sure that the product is properly grounded when in use. The plug on this cord will fit only into a grounding-type outlet. This is a safety feature. If you are unable to insert the plug into an outlet, contact an electrician to install the appropriate outlet.
- If you use an extension cord with this system, make sure that the total ampere rating on the products plugged into the extension cord does not exceed the extension cord ampere rating.
- If your system is fitted with a TV Tuner, cable, or satellite receiver card, make sure that the antenna or cable system is electrically grounded to provide some protection against voltage surges and buildup of static charges.

Care during use

- Do not walk on the power cord or allow anything to rest on it.
- Do not spill anything on the system. The best way to avoid spills is to avoid eating and drinking near your system.
- Some products have a replaceable CMOS battery on the system board. There is a danger of explosion if the CMOS battery is replaced incorrectly. Replace the battery with the same or equivalent type recommended by the manufacturer. Dispose of batteries according to the manufacturer's instructions.
- When the computer is turned off, a small amount of electrical current still flows through the computer. To avoid electrical shock, always unplug all power cables and modem cables from the wall outlets before cleaning the system.

Warning



This unit has two power supplies. To remove power from all internal circuitry you must disconnect both power cords.

- Unplug the system from the wall outlet and refer servicing to qualified personnel if:
 - The power cord or plug is damaged.
 - Liquid has been spilled into the system.
 - The system does not operate properly when the operating instructions are followed.
 - The system was dropped or the cabinet is damaged.
 - The system performance changes.

Replacement parts and accessories

Use only replacement parts and accessories recommended by Gateway.

Important

Do not use Gateway products in areas classified as hazardous locations. Such areas include patient care areas of medical and dental facilities, oxygen-laden environments, or industrial facilities.

Warning

To reduce the risk of fire, use only No. 26 AWG or larger telecommunications line cord.

Regulatory compliance statements

United States of America

Federal Communications Commission (FCC)

Unintentional emitter per FCC Part 15

FCC Part 15 Class A Statement

The server is designated as complying with Class A requirements if it bears the following text on the rating label:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.

(2) This device must accept any interference received, including interference that may cause undesired operation.

This device has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

Caution



Changes or modifications not expressly approved by Gateway could void the FCC compliance and negate your authority to operate the product.

Telecommunications per FCC part 68

(applicable to products fitted with USA modems)

Your modem complies with Part 68 of the Federal Communications Commission (FCC) rules. On the computer or modem card is a label that contains the FCC registration number and Ringer Equivalence Number (REN) for this device. If requested, this information must be provided to the telephone company.

An FCC-compliant telephone line cord with a modular plug is required for use with this device. The modem is designed to be connected to the telephone network or premises wiring using a compatible modular jack which is Part 68-compliant. See installation instructions for details.

The Ringer Equivalence Number (REN) is used to determine the number of devices which may be connected to the telephone line. Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming call. In most areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company.

If this device causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. The telephone company may request that you disconnect the equipment until the problem is resolved.

The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of this equipment. If this happens, the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

This equipment cannot be used on telephone company-provided coin service. Connection to party line service is subject to state tariffs. Contact the state public utility commission or public service commission for information.

When programming or making test calls to emergency numbers:

- Remain on the line and briefly explain to the dispatcher the reason for the call.
- Perform such activities in the off-peak hours such as early morning or late evenings.

The United States Telephone Consumer Protection Act of 1991 makes it unlawful for any person to use a computer or other electronic device to send any message via a telephone fax machine unless such message clearly contains, in a margin at the top or bottom of each transmitted page or on the first page of the transmission, the date and time it is sent, an identification of the business, other entity, or other individual sending the message, and the telephone number of the sending machine or such business, other entity, or individual. Refer to your fax communication software documentation for details on how to comply with the fax-branding requirement.

FCC declaration of conformity

Responsible party:

Gateway Companies, Inc.
610 Gateway Drive, North Sioux City, SD 57049
(605) 232-2000 Fax: (605) 232-2023

Product:

- Gateway E-9220T Server

For unique identification of the product configuration, please submit the 10-digit serial number found on the product to the responsible party.

This device complies with Part 15 of the FCC Rules. Operation of this product is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Caution



Changes or modifications not expressly approved by Gateway could void the FCC compliance and negate your authority to operate the product.

Canada

Industry Canada (IC)

Unintentional emitter per ICES-003

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Classe A prescrites dans le règlement sur le brouillage radioélectrique édicté par Industrie Canada.

Telecommunications per DOC notice

(for products fitted with an IC-compliant modem)

The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operation, and safety requirements. The Department does not guarantee the equipment will operate to the users' satisfaction.

Before installing this equipment, users should make sure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the inside wiring associated with a single-line individual service may be extended by means of a certified connector assembly. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Appendix C:

Users should make sure, for their own protection, that the electrical ground connections of the power utility, telephone lines, and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

Warning



To avoid electrical shock or equipment malfunction do not attempt to make electrical ground connections by yourself. Contact the appropriate inspection authority or an electrician, as appropriate.

The **Ringer Equivalence Number** (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed 5.

Laser safety statement

All Gateway systems equipped with CD and DVD drives comply with the appropriate safety standards, including IEC 825. The laser devices in these components are classified as "Class 1 Laser Products" under a US Department of Health and Human Services (DHHS) Radiation Performance Standard. Should the unit ever need servicing, contact an authorized service location.

Warning



Use of controls or adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure. To prevent exposure to laser beams, do not try to open the enclosure of a CD or DVD drive.

California Proposition 65 Warning

Warning



This product contains chemicals, including lead, known to the State of California to cause cancer and/or birth defects or reproductive harm.

Environmental information

The product you have purchased contains extracted natural resources that have been used in the manufacturing process. This product may contain substances known to be hazardous to the environment or to human health.

To prevent releases of harmful substances into the environment and to maximize the use of our natural resources, Gateway provides the following information on how you can responsibly recycle or reuse most of the materials in your "end of life" product.

Waste Electrical and Electronic Equipment (commonly known as WEEE) should never be disposed of in the municipal waste stream (residential garbage collection). The "Crossed-Out Waste Bin" label affixed to this product is your reminder to dispose of your "end of life" product properly.

Substances such as glass, plastics, and certain chemical compounds are highly recoverable, recyclable, and reusable. You can do your part for the environment by following these simple steps:



- When your electrical or electronic equipment is no longer useful to you, "take it back" to your local or regional waste collection administration for recycling.
- In some cases, your "end of life" product may be "traded in" for credit towards the purchase of new Gateway equipment. Call Gateway to see if this program is available in your area.
- If you need further assistance in recycling, reusing, or trading in your "end of life" product, you may contact us at the Customer Care number listed in your product's user guide and we will be glad to help you with your effort.

Finally, we suggest that you practice other environmentally friendly actions by understanding and using the energy-saving features of this product (where applicable), recycling the inner and outer packaging (including shipping containers) this product was delivered in, and by disposing of or recycling used batteries properly.

With your help, we can reduce the amount of natural resources needed to produce electrical and electronic equipment, minimize the use of landfills for the disposal of "end of life" products, and generally improve our quality of life by ensuring that potentially hazardous substances are not released into the environment and are disposed of properly.

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Index

Numerics

- 5.25-inch drive
 - installing 39, 41
 - location 2

A

- accessories
 - safety precautions 104
- ACPI runtime checkpoints 78
- Active Management Technology 23
- add-in card
 - see* card
- administrator password
 - see* supervisor password
- Advanced menu
 - BIOS Setup utility 66
- AMT 23

B

- battery
 - replacing
 - troubleshooting 75
- beep codes 76
- bezel assembly
 - installing 36
 - removing 32
- BIOS
 - resetting 68
 - resetting passwords 69
 - settings 95
 - troubleshooting 79
 - updating 67
- BIOS Setup utility
 - menus 66, 96
 - navigating through 66
 - opening 66
 - passwords 19, 69
 - recording configuration 18
 - settings 96
 - submenus 102
 - troubleshooting 79
- boot
 - device 11

menu 11

- booting from SUP CD 22

C

- card
 - installing 47
 - reseating 47
 - retention levers 3
 - slot location 5, 47
 - troubleshooting 80
- case
 - interior 4
 - opening 30
- CD
 - System Companion 26
 - troubleshooting 79
- CD or DVD drive
 - installing 39, 41
 - location 2
 - troubleshooting 79
- Certificate of Authenticity 86
- checkpoints
 - ACPI runtime 78
 - DIM code 78
- cleaning
 - keyboard 17
 - screen 17
 - servers 16
 - tape drive 17
- CMOS battery 59
 - see* battery
- conditioner
 - line 9
- configuring
 - onboard RAID 42
- connections
 - keyboard 3
 - LAN 3
 - lock slot 3
 - monitor 3
 - mouse 3
 - network 3
 - parallel 3

- power 3
 - RJ-45 3
 - serial 3
 - USB 2, 3
 - VGA 3
 - control panel
 - location 2
 - cover panel
 - removing 30
 - replacing 37
 - cover release latch
 - location 2
 - creating DOS-bootable CD 21
 - creating SUP CD 21
- ## D
- DDR SDRAM
 - see* memory
 - device drivers
 - installing 26
 - diagnostic LEDs
 - ACPI runtime checkpoints 78
 - DIM code checkpoints 78
 - DIM code checkpoints 78
 - DIMM
 - see* memory
 - diskette drive
 - installing 39, 41
 - location 2
 - replacing 39, 41
 - troubleshooting 79
 - display
 - troubleshooting 84
 - documentation
 - Gateway Web site 6
 - System Companion CD 26
 - drive bays
 - location 2
 - drivers
 - installing 26
 - drives
 - CD 2, 39, 41
 - configuring 38
 - diskette 2, 39, 41
 - DVD 2
 - installing 38
 - installing 5.25-inch 39, 41
 - installing CD 39, 41
 - installing diskette 39, 41
 - replacing 38
 - tape 17
 - troubleshooting 79, 80

DVD drive

see CD or DVD drive

E

- electronic specifications 93
- electrostatic discharge (ESD) 29
- environmental specifications 92
- error messages 73

Exit menu

BIOS Setup utility 66

expansion card

see card

F

fans

- installing 56
 - location 3
 - rear 3
 - replacing 56
- finding specifications 94

G

Gateway 6

- Customer Care 86
- Learning Libraries 87
- Web address 6

Gateway Server Manager 19

H

hard drive

- indicator 2
- LED indicator 2
- troubleshooting 80

heat sink

installing 51

help

- telephone support 86
- tutoring 87

hot-swap

power supply module 54

hot-swap drives
location 2

I

IDE

cables 39
drive configuration 38
indicators 2
LED 10
installing
 5.25-inch drive 39, 41
 add-in card 47
 bezel assembly 36
 card 47
 CD or DVD drive 39, 41
 CMOS battery 59
 diskette drive 39, 41
 expansion cards 47
 fans 56
 heat sink 51
 media drive 39, 41
 memory 45
 PCI card 47
 power supply module 54
 processor 51
 system board 61
interior
 case 4
Internet connection
 troubleshooting 82
interrupts 93
IRQ assignments 93

J

jacks
 see connections

K

Kensington lock slot 3
keyboard
 cleaning 17
 port 3
 troubleshooting 82

L

LAN jack 3

LED

 indicators 2, 10
 power/sleep 10
line conditioners 9
lock
 Kensington 3
key 2
location 2, 3

M

Main menu
 BIOS Setup utility 66
maintenance
 cleaning 16
 cleaning case 16
 cleaning keyboard 17
 cleaning screen 17
 Gateway Server Manager 19
 general guidelines 16
 recording BIOS configuration 18
master boot record 81
memory
 installing 45
 map 93
 troubleshooting 82
messages 73
modem
 connection speed 83
 troubleshooting 82
monitor
 cleaning 17
 port 3
 troubleshooting 84
motherboard
 see system board
mouse port 3

N

network jack 3

O

onboard RAID
 configuring 42
onboard SATA RAID 42

opening case 30
operating system
 setting up 13

P

parallel port 3
password
 resetting BIOS 69
 supervisor 19
 user 19
ports
 see connections
POST (power-on self-test) 11
power
 button 2, 10, 12
 cord connector 3
 indicator 2, 10
 LED 2
 line conditioners 9
 protecting from surges 9
 reset button 2
 source problems 9
 static electricity 29
 troubleshooting 85
 uninterruptible power supply (UPS) 9
power supply
 uninterruptible 9
power supply module
 installing 54
power/sleep LED 10
power-on self-test 11
processor
 heat sink 51
 installing 51
 replacing 51
 troubleshooting 85

R

RAID configuration
 onboard SATA 42
RAM
 see memory
rear fan 3
removing
 see installing
replacing

fans 56
processor 51
 see installing
resources
 interrupts 93
 memory map 93
RJ-45 jack 3

S

safety
 general precautions 8, 104
 guidelines for troubleshooting 72
 static electricity 29
screen
 cleaning 17
 troubleshooting 84
SDRAM
 see memory
security
 set passwords 19
 setting up in BIOS 19
 supervisor password 19
 system 19
 user passwords 19
 using password 19

Security menu
 BIOS Setup utility 66
serial number 86
serial port 3
setting up
 hardware 8
 operating system 13
 safety precautions 8, 16, 104

Setup utility
 see BIOS Setup utility
sparing

 memory online 46
specifications 89, 94
 electronic 93
 environmental 92
 system board 91
starting server 10
static electricity 29
SUP CD
 booting from 22
 creating 21

- supervisor password 19
 - Support 94
 - system 90
 - administration 19
 - control 19
 - management 19
 - security 19
 - specifications 90
 - startup 10
 - system board
 - components 5
 - installing 61
 - replacing 61
 - specifications 91
 - thumbscrew location 3
 - System Companion CD 26
 - system configuration
 - protecting with passwords 19
 - system interrupts 93
 - system recovery
 - recording BIOS configuration 18
- T**
- tape drive
 - cleaning 17
 - technical support
 - Customer Care 86
 - resources 86
 - tips before contacting 86
 - telephone support 86
 - training
 - CD 87
 - Gateway Learning Libraries 87
 - troubleshooting
 - add-in card 80
 - battery 75
 - beep codes 76
 - BIOS 79
 - card 80
 - CD drive 79
 - CD or DVD 79
 - diskette drive 79
 - error messages 73
 - expansion card 80
 - general guidelines 75
 - general safety guidelines 72
- hard drive 80
 - Internet connection 82
 - keyboard 82
 - master boot record 81
 - memory 82
 - modem 82
 - monitor 84
 - power 85
 - power source problems 9
 - processor 85
 - safety guidelines 72
 - SCSI drive 81
 - technical support 86
 - telephone support 86
 - video 84
 - turning off server 12
 - turning on server 10
- U**
- uninterruptible power supply (UPS) 9
 - updating BIOS 67
 - UPS 9
 - USB ports
 - location 2, 3
 - user password 19
 - utility
 - BIOS Setup 66
- V**
- VGA port 3
- W**
- Web site
 - Gateway 6

MAN E-9220T PATTON SRV GDE R0 08/05



A standard 1D barcode is positioned within a dark rectangular frame. The barcode consists of vertical black bars of varying widths on a white background. Below the barcode, the number "8510879" is printed in a small, white, sans-serif font.